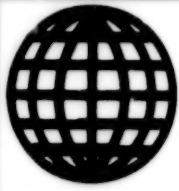


JPRS-TEP-90-015
17 OCTOBER 1990



**FOREIGN
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JPRS Report

Epidemiology

Epidemiology

JPRS-TEP-90-015

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GHANA

Ministry Says Cholera Outbreak Not Due to Air Pollution

AB2709095290 Accra Domestic Service in English
0600 GMT 24 Sep 90

[Text] The epidemiology division of the Ministry of Health has described as baseless the rumor that the outbreak of cholera in certain parts of the Accra metropolis is due to the pollution of the air from the excreta disposal pit at the Korle Gonno beach. In an interview with the GNA [GHANA NEWS AGENCY] in Accra yesterday, the acting head of the division, Dr. Phyllis Antwi, said first cholera germs enter the body only through the mouth. The smell from the Korle Gonno pit could not be said to be a contributory factor to the outbreak of the disease.

Dr. Antwi explained that any person with diarrhea should immediately be given fluids such as coconut oil, ntinshinu—water from boiled kenkey—[local meal], and oral rehydration salts, ORS. It must be reported to the nearest center or hospital after 24 hours, if there is no improvement. She said this will enable health authorities to assess whether the diarrhea is due to other organisms. Dr. Antwi said in order to prevent outbreak of diarrheal diseases, proper environmental sanitation is necessary. She said preparing food in unhygienic conditions should be discouraged.

According to Samuel Antwi-Otoo, administrator of the Korlebu Teaching Hospital, 10 people, including five children, have died from cholera and 117 have been treated since the beginning of the month.

KENYA

Plague in Nairobi Leaves at Least Four Dead

AB0309225590 Paris AFP in English 1849 GMT
3 Sep 90

[Text] Nairobi—At least four people have died and more than 10 other people have been admitted to the hospital in a plague outbreak in Nairobi, it was reported on Monday. Newspaper reports here quoted the Director of Medical Services Professor Joseph Oliech as confirming the outbreak near maize silos in Nairobi's Embakasi area and issuing guidelines to combat the disease.

Plague wiped out up to a third of the population of Europe during the Middle Ages. It is caused by a bacteria "Yersinia pestis" transmitted by fleas which feed on rats. Prof. Oliech said there were two types of plagues—bubonic and pneumonic. It is not the first time that a plague has been reported in Kenya, similar outbreaks were experienced in 1980, 1987 and early this year.

Newspaper reports Monday quoted an unnamed medical official denying that more than 400 people had been treated for the disease.

Other leading hospitals also expressed doubts about the figure.

Meanwhile, an outbreak of meningitis has been reported in western Kenya's Nyanza District and the Minister for Industry Dalmas Otieno has advised residents to take sick relatives to hospital rather than treat them with herbs.

MOZAMBIQUE

Four Cases of Cholera Registered in Nampula

MB0409115590 Maputo Domestic Service in Portuguese
1030 GMT 4 Sep 90

[Text] Dr. Alfino Mbefe, provincial health director in Nampula, revealed today that four cases of cholera were registered in Malema District, Nampula Province, during the second half of this August. These are the first cases of cholera in the province since the outbreak of the disease in the country this year. The disease has already affected the cities of Tete, Beira, and Quelimane in the provinces of Tete, Sofala, and Zambezia, respectively.

Cholera Kills Four in Zambezia's Mopeia District

MB1609131290 Maputo Domestic Service in Portuguese
1030 GMT 16 Sep 90

[Text] Quelimane health officials report that four people have died of cholera in Mopeia District, Zambezia Province. The source did not say how many cases of cholera have been diagnosed in the district.

A total of 192 cases of cholera have been reported in Quelimane, and seven people have died since the outbreak of the disease in June.

Cholera Hits Quelimane; Diarrhea Affects 200 People

MB2509074990 Maputo Domestic Service in Portuguese
1730 GMT 24 Sep 90

[Text] More than 200 people in Quelimane suffer from acute diarrhea because of the cholera outbreak in the city.

Quoting a source in Quelimane's health department, Radio Mozambique reports that the cholera outbreak has already caused seven deaths. The source said more deaths could occur over the next few days if preventive measures are not rigorously observed.

Measles Kills 42 Children in Cabo Delgado

MB2908084690 Maputo Domestic Service in Portuguese
0500 GMT 29 Aug 90

[Text] A total of 42 children, ranging from 0-4 years of age, have died of measles in June and July this year at Nanhupo village in Namuno District, Cabo Delgado

Province. Local health structures are unable to adequately deal with the situation because of a transportation shortage and the war which hinders the movement of people and the distribution of medicines in the affected areas.

Measles, Other 'Endemic' Diseases Kill 79 in Cabo Delgado

MB1409121090 Maputo Domestic Service in Portuguese 0800 GMT 14 Sep 90

[Text] A total of 79 persons died of measles and other endemic diseases in Namuno District of Cabo Delgado Province between June and August 1990. Most of the victims were war-displaced persons.

A Department for the Prevention and Struggle Against Natural Disasters report issued in Namuno notes that children die of measles in most of the district's villages daily.

Measles have killed 29 children four years-old and younger in (Milamba) village since the outbreak of the disease in Chiure District in July. Another 96 children suffering from measles are currently being looked after at a local health post.

NAMIBIA

Malaria, Diarrhea Kill 263 in North

90WE0296B Windhoek TIMES OF NAMIBIA in English 14 Jun 90 p 3

[Article by Oiva Angula: "263 People Killed by Disease in North"; first paragraph is introductory paragraph]

[Text] Epidemiologists and other doctors who were dispatched to the northern regions of Namibia to battle what was thought to be a "mysterious disease" had attributed the deaths in those areas to a malaria-cum-diarrhoea epidemic, Minister of Health and Social Services Nickey Iyambo said yesterday.

"Analysis showed this was not a 'mysterious' entity as first thought," Dr Iyambo said. "But a combination of malaria, which is endemic to this part of the country, and diarrhea".

He said there were four possible causes for the outbreak:

- vector control activities (insecticide spraying) were interrupted in several areas of the northern regions in 1989 with the withdrawal of the South African Defence Force from those areas;
- heavy rainfall late in the season (March/April). This was recorded at 275 mm as compared to 109 mm the previous year;
- unsound infrastructure of the health delivery system in the northern regions due to the war; and
- water contamination and poor sanitation.

He gave the assurance that the epidemics, that killed a total of 263 people so far, were under control and were expected to be over in the next four to five weeks. Dr Iyambo said the causes of the emergency had been properly identified and the remedial measures taken had proved to be effective, adding that the number of affected people were "progressively decreasing" partly due to the falling of winter.

Statistics had shown that there were ten times as many cases of malaria compared with the same period last year, he said. This prompted President Sam Nujoma to declare the north, northeast and northwest regions as health crisis areas.

Although it was the northern areas which were mostly plagued by the malaria epidemic, the minister said many cases of malaria were also recorded in other parts of the country as well.

In the past, 600 cases of malaria were reported in Windhoek on a monthly basis and the figure increased to 800 to 1 000 this year.

Dr Iyambo said the government would pay constant attention to the northern regions to avoid the repetition of similar episodes the next season.

Among the recommendations made was the establishment of a National Medical Emergency, Preparedness and Surveillance Committee.

He said technical assistance from the UN would be channeled to Namibia through the UN Development Programme, UNDRO and World Health Organisation Panafrikan Centre for Emergency Preparedness and Response to prepare the country for future contingencies in a coordinated and multisectoral manner.

A WHO team currently in Namibia would help the Namibian experts to prepare a draft of action for the diarrhoea disease control programme, he said.

Another WHO mission was due to arrive in the country in July/August to set up the basis for a comprehensive Malaria Action Plan for Namibia, including vector control.

He said services, training and research activities would be included to provide a solid framework for prevention and control.

Plans were underfoot to allocate funds through the 1990 WHO Programme of Technical Collaboration with Namibia to strengthen activities of community water supply and sanitation.

Dr Iyambo said the following measures would be taken to strengthen the primary health care (PHC) infrastructure:

- physical rehabilitation of health facilities damaged or destroyed by war;
- deployment of national health workers and UN doctors;

- allocation of transport vehicles to hospitals;
- continued supply of essential drugs to all health facilities; and
- in-service training for health workers.

Close coordination with the health inspectors would be established to ensure that they were integrated into the PHC infrastructure to contribute more effectively in prevention and control activities, Dr Iyambo said.

NIGERIA

Kano Government Confirms 'Strange' Disease Outbreak

AB2409113690 Kaduna Domestic Service in English
1700 GMT 23 Sep 90

[Text] The Kano State Government has now confirmed the outbreak of a strange disease that killed more than 60 children at Majiya village in Ringing local government area. The state commissioner of information, who made the confirmation in Kano, apologized to the Nigerian Union of Journalists [NUJ] in Kano State for an earlier denial of the report. He said the denial was a result of misinformation by some officials of the Ministry of Health trying to verify the situation. The commissioner commended the journalists for their efforts at informing the government about the existence of the disease.

Meanwhile, the state council of the NUJ has accepted the apology. In a statement in Kano, the union said the earlier denial of the disease had eroded their credibility and exposed them to undue implication by overzealous government officials. The union reminded government officials that journalists owe it a duty to be able to inform the government of problems facing the public. Reports from (Madjia) town indicate that the death toll as a result of the strange disease had risen from 60 last Friday to 67 pupils.

SEYCHELLES

Shortage of Medical Supplies Improving

90AF0579A Victoria SEYCHELLES NATION
in English 13 Jul 90 pp 1, 2

[Text] The Health Ministry has given an assurance that every effort is being made to avoid running short of medicine in the future and pointed out that the situation lately has at no time been critical.

Health principal secretary Conrad Shamlaye said recent shortages had been due to shortenings in administration and delays in delivery and transport, among other factors.

"We view it as a problem even if we are short of just one essential drug and understand patients' frustrations in that regard," he told reporters.

Dr Shamlaye was being interviewed by journalists of the NATION and Radio-Television Seychelles in Fas Avek Lapres, a new TV programme which will quiz senior officials on how their ministries or organisations are being run.

He said, however, that at no time whatsoever had the shortage of medicines been so acute as to imperil the health of patients.

Dr Shamlaye said there had been instances whereby patients who had been prescribed certain medicines for a month could only obtain them for a week because of the late arrival of shipments from abroad.

He also pointed out that although other medicines could be prescribed, many people who were used to a particular brand were unwilling to try another.

"Very often, it boiled down to a question of habit," the health principal secretary said, citing the example of patients who insist on having a particular medicine in capsule form and refusing the equivalent in tablet or liquid.

Turning to administrative hitches, Dr Shamlaye said this was often linked to a lack of communication between health services personnel and the public.

"For example, a patient is simply told to try another clinic when the one in his district has run out of some medication," he said.

Dr Shamlaye said it was up to the staff to place orders for medicine well ahead as members of the public could not be expected to go from one clinic to another in search of medicine.

He said this was a typical instance of how inefficiency and lack of professional conscience on the part of some employees could cause the problem to be exaggerated, conveying the impression that the problem had reached acute proportions.

Dr Shamlaye stressed that the Health Ministry presently stocked all essential drugs and could not foresee any serious problems in the near future.

Questioned in the reliability of foreign suppliers of medicine, the health principal secretary noted it was obvious that as a low-volume importer, Seychelles was given less priority than bigger importers.

He said his ministry had at times been compelled to change suppliers, as in the case of Paracetamol, a widely used painkiller. A consignment of the tablets had to be withdrawn from stock because of low standard.

The resulting shortage forced the ministry to stop selling Paracetamol temporarily at its dispensaries until its stock returned to normal.

Dr Shamlaye however ruled out allowing private chemists and other dealers to sell more medicines as one way of making up for any possible shortage in state clinics.

He said private chemists or shops could not be allowed to sell medicines which had to be used according to medical advice.

"You don't have doctors at these places and chemists don't have the same functions as medical officers," he said.

Dr Shamlaye also said his ministry was planning a more comprehensive development of the health services at district level to ensure a more lasting and beneficial relationship between patients and the personnel.

SOUTH AFRICA

Official Says Tuberculosis Affects One-Third of Citizens

*MB1909055290 Johannesburg SAPA in English
2037 GMT 18 Sep 90*

[Text] Cape Town—Tuberculosis had to be put on the agenda of political organisations because more than a third of South Africa's population is infected with the disease, Dr Derek Yach, head epidemiologist at the Medical Research Council, said on Tuesday [18 September].

Speaking at the SANTA [South African National Tuberculosis Association] annual general meeting, Dr Yach said it was the South African National Tuberculosis Association's job to talk to the political organisations about the disease.

Some 10 to 14 million people were infected with TB in SA, with 50,000 to 60,000 new cases being diagnosed every year, he said.

The disease rate was rising rapidly in the western Cape, as a direct result of poverty, housing backlogs and other social problems such as overcrowding and alcoholism.

Besides mass urban problems, political violence had led to the destruction of vital TB services in townships since the 1986 uprisings in Cape Town.

"Elsewhere in SA, the documentation of the effects of political violence suggest that we need to plan realistically. We must accept that until we achieve political stability, we need to make plans to ensure that all services can continue," said Dr Yach.

The changes in South Africa's political climate was good news for SANTA because it would be easier to put TB on the political agendas of organisations that had been previously banned. SANTA also needed to conduct in-depth talks on primary health care, with all the political organisations, said Dr Yach.

1,700 Malaria Cases Reported in Northern Transvaal 1989

*MB2809130690 Maseru Domestic Service in English
1130 GMT 28 Sep 90*

[Text] The South African Department of Health says about 1,700 cases of malaria were reported in the Northern Transvaal alone last year. More than half the patients were Mozambicans who entered South Africa illegally. The Health Department says 20 malaria sufferers died of this disease last year.

Game Park Anthrax Outbreak Reaches 'Epidemic' Proportions

*MB1209094690 Johannesburg Television Service
in English 1800 GMT 11 Sep 90*

[Text] An outbreak of anthrax in the Kruger National Park is reaching epidemic proportions.

The disease, which is carried by vultures and blowflies, has already claimed between 200 and 300 victims, including lion and elephant.

Dr. Vossie de Vos **Begin**, researcher: [begin recording] On 25 August of this year, we diagnosed anthrax for the first time in the Kruger Park. Since then it has taken on epidemic proportions and has spread over an area of about—not less than—1,000 square km. That is an area extending from west of the Lethaba Rest Camp and north of the Olifants River, and it's spreading at this stage towards the north and towards the westerly direction where it has already jumped over a fence into a neighboring farming area.

We have lost about 200, not less than 200 animals. We located 202 animals up to date and that includes mostly kudu and buffalo carcasses, but we have lost quite a few other animals as well, like elephant, lion, and jackal. [end recording]

Park Official Denies Anthrax at 'Epidemic Proportions'

*MB2609110090 Johannesburg Television Service
in Afrikaans 0530 GMT 26 Sep 90*

[Text] About 500 animals in the Kruger National Park have died of anthrax in the past month. A spokesman has however denied that it has reached epidemic proportions. According to the spokesman, the disease has not spread further than the areas where it was first reported, between the Olifants and Letaba Rivers.

Ninety percent of these deaths have occurred among kudus and buffaloes. The immunization program is still continuing and carcasses found in the veld are being burned.

The Department of Water Works will open sluice gates of dams in the upper reaches of the Olifants and Letaba Rivers so that stagnant water can be rinsed clean.

**Military To Begin Anthrax Inoculation Program
20 Sep**

*MB1909180490 Johannesburg SAPA in English
1429 GMT 19 Sep 90*

[Text] Pretoria Sept 19 SAPA—The SADF [South African Defense Force] is undertaking a preventative inoculation programme in the north-eastern Transvaal to vaccinate game against anthrax.

A statement from the SADF on Wednesday said the SADF Medical Services, assisted by the SAAF [South African Air Force] and in cooperation with the nature conservation authorities of the SADF, would undertake this programme tomorrow (Thursday) [20 Sep].

Anthrax is a fatal disease which was currently affecting game in the Kruger National Park and surrounding area.

Kudu, eland, zebra, white rhinoceros, giraffes, sable, blue wildebeest and impala on military property at Phlaborwa, Gravelotte and Hoedspruit would be vaccinated.

Animals would be inoculated by dart from the air.

The programme starts on Thursday and is due to be completed by September 28, said the SADF.

SWAZILAND

Minister Concerned At Escalating Tuberculosis Rate

*MB2408140690 Mbabane Domestic Service in English
1600 GMT 23 Aug 90*

[Text] The minister for health, Dr. Fanny Friedman, has expressed concern over the escalating rate of tuberculosis cases in the country. She was speaking this morning when she officially closed a three-month rural health administration course for the Manzini Inkhundla [tribal council] held at Mfanyana Hall in Manzini through the deputy director of health services, Dr. Qhing- Qhing Dlamini.

The minister said tuberculosis, as one of the most serious diseases, its cases should be decreasing instead of increasing. [sentence as heard] She said the rural health motivators who have completed their course will be in a better position to implement the skills they have learned in the promotion of preventive and curative measures of diseases in the various areas they will be operating in.

Dr. Friedman stated that the cooperation between the chiefs and the rural health motivators is very important in the promotion of health activities in the country.

Rabies Outbreak in Manzini

*MB1409175390 Mbabane Domestic Service in English
1600 GMT 14 Sep 90*

[Text] The Ministry of Agriculture and Cooperatives says there is an outbreak of rabies in Manzini. A statement released today said on Monday [10 September] this week the disease killed one dog at Mhlaleni area in Manzini, and identified Malunga, [name indistinct], Logoba, Mzimnene, and Maholwane dip tank areas as being affected. Dogs in those places will be vaccinated on 24 September. On 21 September veterinary officers will vaccinate dogs at Kwaluseni Post Office, Madoda Garage, Zakhele Fire Station, Manzini Wesleyan School, Moneni, Enkomeni, and Ngwane Park Stores.

The statement declared Mhlaleni area as a rabies guard zone and said dogs in that area should be tied up. The outbreak of rabies occurred while the national annual vaccination campaign for rabies was in progress.

UGANDA

AFP Reports 'At Least 200' Die of Meningitis

*AB1409221690 Paris AFP in English 1757 GMT
14 Sep 90*

[Text] Kampala—At least 200 people have died of meningitis in western Uganda's Mbarara district, Acting District Administrator Henry Rwigyemera said Friday. He said virtually all parts of the district had reported cases of meningitis which broke out in Birere sub-county three months ago.

On Friday, Isingiro County member of parliament John Kigyagi said in a statement broadcast over radio that at least 20 people had died in an epidemic in Oruchinga valley refugee settlement. The settlement has an estimated 30,000 people, all of them Rwandese, and is located near Kagera river on the Uganda Tanzania border. Mr. Kigyagi said all schools in the settlement had been closed following the outbreak.

The acting district administrator said Friday that the epidemic could not be contained because of vaccine shortages. He however said medical authorities in the country expected drugs to be delivered in the area next week. Mr. Rwigyemera said the district, with a population of over 800,000, people had only received vaccines enough for 90,000 people and that his office was receiving reports of more deaths in Yabushozi, Ibanda, and Ntungamo areas. Nineteen people were reported to have died in Ntungamo last week of the epidemic prevalent in the district's 30 sub-counties.

ZAMBIA

Six Suspected Cholera Deaths Among Prisoners

90WE0298A Lusaka *TIMES OF ZAMBIA* in English
14 Jul 90 p 1

[Text] More than 70 children have died from diarrhoea and vomiting in chief Nsokolo's area in Mbala within the last four months.

Mbala district governor Cde Samuel Wamuwi said in a telephone interview that the children died in Senka, Siakalembe, Chileshe, Chilundumushi and Chipoka villages.

He said earlier reports indicated the children had died of measles, but a medical team which visited the area on Thursday discovered that diarrhoea and vomiting was killing the children.

The team led by district medical officer Dr Luke Ectors was accompanied by the World Vision International (WVI) officials who after receiving the reports of deaths rushed to the area to help.

On the day the team arrived three more children died from the same ailment.

Dr Ectors briefed Cde Wamuwi on their findings and recommended that urgent steps be taken to curb the scourge.

Senka village on the Mbala-Nakonde road did not have any access to medical facilities. The nearest clinic was 40 kilometres away.

The WVI pledged to provide a vehicle to help ferry medical supplies to the area.

Once transport became available, hospital workers would treat children and also educate parents on health care. They would also teach the need for proper sanitation.

The stream from which villagers drew water came from Tanzania. Other sources of water for Senka villagers were wells whose water was suspected to be contaminated.

And six prisoners have died at Mukobeko medium prison from suspected cholera, while three others have been admitted at a health centre set up within the prison area, Zana reports.

Kabwe Urban district executive secretary and chairman of the cholera district surveillance committee, Cde Oswald Katakwe confirmed the deaths of prisoners from suspected cholera.

High Incidence of TB Among Lusaka Firemen

90WE0298B Lusaka *SUNDAY TIMES OF ZAMBIA*
in English 15 Jul 90 p 7

[Excerpt] The high incidence of tuberculosis cases among fire fighters has forced the Lusaka Urban district council to launch medical check-ups, it has been learnt.

Chairman of the Fire Services Association of Zambia (FSAZ) Cde Hazi Tembo confirmed in Lusaka the council had finally accepted their calls that his men should be checked by doctors for TB.

The situation had reached an alarming level early this year with 12 certified cases of TB out of a work force of about 150 firemen.

"Even now, there are many of our friends who are complaining of chest pains. But we are glad that the council has finally started sending firemen for medical check-ups," Cde Tembo said.

The first group of seven men went to the University Teaching Hospital (UTH) for examinations on Tuesday while the next group was expected to go on Friday.

He said because of the seriousness of the ailment, the medical examinations would be extended to the families of the firemen found with TB.

"Unfortunately one of the 12 firemen reported earlier by the *Sunday Times* died last May after being in and out of hospital for a long time. He later went to the village where he died," he said. [passages omitted]

20 Cattle Dying Daily of Tick-Borne Disease

90WE0298C Lusaka *TIMES OF ZAMBIA* in English
4 Jul 90 p 7

[Excerpt] The death toll of cattle dying from tick-borne diseases has continued to rise in Eastern Province. Member of the Central Committee Cde Maxwell Beyani has said.

Cde Beyani named Chipata, Chadiza and Katete as the worst hit areas where cattle continued dying in large numbers.

He said the animals were dying because the owners were still failing to take them for dipping which cost only K5 per animal.

But the diseases had been curbed in areas where cattle owners had responded to the campaign to have their animals dipped.

He said it was difficult to determine the number of cattle which have died because the owners were skinning them after dying.

Earlier Cde Beyani said at the rate the animals were dying—about 20 heads everyday the animals would disappear in the area if the diseases were not controlled.

Education campaigns to encourage cattle owners to have their animals dipped would continue. [passage omitted]

Corridor Disease Kills Cattle in Namwala

90WE0298d Lusaka *TIMES OF ZAMBIA* in English
10 Jul 90 p 73

[Text] Several cattle are reported to have died in Namwala district from corridor disease since the beginning of this year.

According to information reaching Livingstone, this has come about because of the farming community shunning Government dip tanks because dipping fees have been increased from K1.50 to K5.00 an animal.

Although information was not available, February was said to have recorded the highest mortality figure.

Sources said an unspecified number of animals believed to be in hundreds in several parts of the district have died as the boycott was widespread.

Most of the farmers decided to stop dipping their cattle in Government dip tanks because they considered the charges too high.

Instead they opted to form their own dip tank societies which were not well stocked with dipping chemicals to control the disease effectively.

Corridor disease can easily be controlled through dipping.

Nationwide Public Health Program To Be Launched*HK2509043490 Beijing CHINA DAILY in English
25 Sep 90 p 1*

[By staff reporter Zhu Baoxia]

[Text] The State Family Planning Commission—encouraged by the success of joint Sino-Japanese health projects—announced yesterday that it will launch an ambitious nationwide public health programme.

The programme combines family planning, better health care for women and children and parasite control in rural areas.

Beginning with villages already participating in the joint Sino-Japanese pilot projects, the commission hopes to gradually expand its health programme across the country.

The commission is considering giving more financial aid to the pilot areas, according to State Family Planning Commission official Huang Baoshan.

The joint public health projects were first introduced to China in 1984 by the Japanese Organization for International Co-operation in Family Planning (JOICFP) when two towns in Jiangsu and Shandong provinces were first selected for the experiments.

So far, eight Chinese towns have participated in the Sino-Japanese health projects which end in 1992.

Huang said the commission will sponsor a national workshop later this year on results of the pilot projects as a way of speeding up application of the health programme nationwide.

The commission is also seeking support from such international organizations as the JOICFP and the International Planned Parenthood Federation (IPPF), he said.

In addition to providing \$300,000 a year, JOICFP also helped China import advanced medical equipment and train administrative and medical personnel at the county and village levels.

As a result of this support and grassroots participation, progress had been made in maternal and child care, parasite control and birth control in the pilot areas.

In Tumotezuo Banner (county) of Huhhot, capital of the Inner Mongolia Autonomous Region, the infant mortality rate has dropped from 35 per thousand in 1986 to 21 per thousand in 1989.

Medically supervised births has also increased from 84.38 percent in 1986 to 99.64 percent this year.

In the past three years, more than 24,000 people, mostly primary and secondary school students, were examined and treated for parasites and 96.7 percent have been completely cured.

Official Notes Increased PRC-WHO Cooperation*OW1009120090 Beijing XINHUA in English
1141 GMT 10 Sep 90*

[Text] Manila—With the support and assistance of the World Health Organization (WHO), China formulated in the past year and is now carrying out smoothly a medium-term program to prevent and control AIDS, diarrhea, acute respiratory infection and other diseases, a senior Chinese official said here today.

Addressing the 41st annual session of the WHO Regional Committee for the Western Pacific, which opened here this morning, Gu Yingqi, Chinese vice-minister of Public Health, said that this is the first year of WHO's Eighth General Program of Work (1990-1995), and China is striving to realize the goal of health for all by the year 2000 in accordance with the guidelines of the general program.

He said his ministry has worked out a program for realizing the goal in rural China, that is, 50 percent of the counties may provide health care service to their population by the year 1995 and the remaining 50 percent may do so by the year 2000. Experiments to this end are being carried out in 1989-1990, he added.

This is also the first year when China joins UNICEF (United Nations Children's Fund), UNFPA (United Nations Population Fund) and WHO in improving maternity and child care in the country's 300 underdeveloped counties, the vice-minister said, adding that everything is going well.

He expressed his belief that the multi-agency cooperation will further cooperation between China and these international agencies and help promote China's medical and public health work.

At the current annual session, participants will discuss the prevention and control of AIDS and other sexually transmitted diseases, eradication of poliomyelitis, health legislation in some countries and other issues.

In all, about 100 representatives and observers from 24 member countries and regions, U.N. specialized agencies and non-governmental organizations working in the field of health, took part in the committee session, which is scheduled to end on September 14.

Inner Mongolia Succeeds in Goiter Treatment*SK2409094190 Hohhot NEIMENGGU RIBAO
in Chinese 22 Aug 90 p 1*

[Text] During the last few years, our region has succeeded remarkably in controlling goiter, the disease caused by a lack of iodine, by adding iodine to salt. From

1983 to 1989, the region produced a total of 560,000 tons of iodized salt and built 86 mechanized iodized salt processing centers. Machines processed more than 90 percent of the iodized salt. The number suffering from endemic goiter throughout the region dropped from 890,000 in 1981 to 200,000 at present. A total of nearly 700,000 patients were cured. The rate suffering from this disease dropped from 12.2 percent during the early control period to two percent at present. Thus we attained the state standards for controlling endemic goiter in the region, and the Ministry of Public Health commended us.

Mishan City Controls Kaschin-beck Disease

SK2509015790 Harbin Heilongjiang Provincial Service
in Mandarin 1000 GMT 21 Sep 90

[Text] After an assessment, our province's specialists in controlling Kaschin-beck disease held that Mishan City has become the first city reaching the basic state standards for controlling this disease. Mishan City was once one of our province's areas seriously plagued by Kaschin-beck disease. A general inspection in 1981 showed that people suffering from this disease in this city numbered nearly 100,000. In order to make the people in the disease-stricken area free themselves from the shackle of this endemic disease at an early date, Mishan City has included the control of endemic diseases on its agenda, invested more than 7 million yuan to strengthen the control of endemic diseases and the building of ranks of professional personnel, and implemented in the afflicted areas throughout the city some comprehensive control measures such as taking medicines, improving water, changing the diet, and improving the living conditions. During the past few years, about 95 percent of children between three and sixteen in the disease-stricken areas throughout the city had taken medicine to control this disease. The water of 188 wells were improved and about 80 percent of the water quality in the major disease-stricken areas was improved. Efforts were made to expand the paddy field

farming acreage by 120,000 mu, thus helping the average per-capita income of people in the disease-stricken areas to improve year after year.

A sample inspection conducted in the first half of this year showed that the number of children between seven and 13 years old suffering from this disease dropped from 17.49 in 1981 to 0.04 percent, thus attaining the state standards for controlling this disease.

Distribution of Q Fever Studied

90P60067A Shanghai ZHONGHUA CHUANRANBING
ZAZHI [CHINESE JOURNAL OF INFECTIOUS
DISEASES] in Chinese Vol 8 No 2, May 90 pp 95-98

[Article by Yu Shurong [0205 2885 2837], Research
Institute of Microbiology, Third Military Medical Uni-
versity: "Study of Q Fever and Its Pathogen in China"]

[Summary] In China, the study of Q fever began in the 1950's. At that time two atypical pneumonia Q fever cases were studied, but no pathogen was isolated. The first rickettsia (Qiyi strain) was isolated in 1962 in Sichuan. Today, Q fever is found in Beijing, Hebei, Inner Mongolia, Heilongjiang, Liaoning, Sichuan, Yunnan, Xizang, Gansu, Qinghai, Xinjiang, Guangdong, Guangxi, Hainan, Fujian, Anhui, and Jiangsu. The study indicates that Q fever rickettsia is present in such domestic animals as cattle, buffalo, yak, sheep, goats, horses, mule, donkey, camels, dogs, pigs and rabbits, and such wild animals as the himalayan marmot (*Marmota himalayana*), tibetan pika (*Ochotona tibetana*), squirrel (*Citellus dauricus*), and rat. Chickens and sparrows are also infected with the pathogen. Q fever rickettsia was also isolated from such canine parasites as the dumbbell tick (*Haemaphysalis campanulata*) of Sichuan, the Asian tick (*Hyalomma asiatica*) of Xinjiang, the prairie tick (*Dermacentor nuttalli*) of Inner Mongolia, and the poisonous-thorn mite (*Laelaps echidninus*) of Fujian. More work is required to study the distribution of the pathogen among ticks, mites, wild animals, birds, and domestic animals.

INDONESIA

Eight People Die of Cholera in Garut

90WE0274B Jakarta ANGKATAN BERSENJATA
in Indonesian 26 Jun 90 p 9

[Text] Eight people have died and 160 are being treated in government clinics and at the Dr. Slamet General Hospital, Garut, West Java, as the consequence of an outbreak of cholera. Information available indicates that in the area served by the Garut office of the Department of Social Welfare the cholera epidemic has spread to these four subdistricts: Bayongbong, Cikajang, Pakenjant, and Leles, as well as Banjarwangi.

The eight people who have died are Edo, 20; Ida, 24; Iyot, 80; Jubaedah, 23; Jono, 25; and Wiganda, 80. All the deceased were residents of Cisurupan and Cikajang subdistricts. They died because they were too late in getting medication at government clinics, since the clinics are quite far from where they lived. The regional government is therefore setting up several Health Posts in the seriously affected areas.

According to ANGKATAN BERSENJATA's source, the cholera epidemic began on 10 June 1990. The most serious cases, totaling 41 persons, were treated at Dr. Slamet General Hospital, while the others came through safely thanks to the ministrations of government clinics.

The patients who first contracted cholera were from the Cibulun, Cisurupan, and Cihurip areas. These areas are isolated and far from government clinics. It was for this reason the regional government immediately established several auxiliary Health Posts.

The Garut regional government is continually monitoring several areas to which cholera has spread. Furthermore, medicines in the form of oralit have been delivered to these areas, in addition to the provision of training to Oral Rehydration cadres—this on the basis of a report that Garut Regency had been declared the region most seriously affected by the cholera epidemic.

The spread of cholera is made possible by [contaminated] food, unclean surroundings, and a change of season. The Priatim region of West Java is experiencing continual rain these days, with the result that a number of areas have become breeding places for bacteria.

SOUTH KOREA

Warning Issued on Leptospirosis Outbreak

SK0209003990 Seoul THE KOREA HERALD
in English 2 Sep 90 p 3

[Text] The Ministry of Health and Social Affairs yesterday issued a warning against a possible outbreak of leptospirosis, a disease common in Korea in the fall.

Farmers are advised to wear boots and gloves while working in the field as a preventive measure against the disease, the ministry said.

Health officials said leptospirosis is primarily transmitted through wild mice excrement during the harvesting season.

Initially, victims develop such symptoms as a high fever, severe cough, vomiting and muscular pain in serious cases, the disease could cause death, the officials said.

In 1987, 500 leptospirosis patients were reported and nine of them died.

Forty-nine victims were reported in 1988 and 47 in 1989, but there were no deaths in the two years.

Health Ministry Issues Cholera Warning

SK0309083490 Seoul YONHAP in English 0828 GMT
3 Sep 90

[Text] Anyone planning to visit Southeast Asia should get a cholera vaccination at least one week before departure, the Health and Social Affairs Ministry in South Korea warned Monday.

A Korean tourist who recently visited Thailand is in isolation in a Korean hospital after being found to be carrying the cholera virus, Ministry officials said.

The Ministry, which says there is no danger of cholera in Korea, is asking all travelers to the area to avoid uncooked foods and to be especially careful about drinking water.

LAOS

9 Percent Contract Malaria in Oudomsai Province

BK1509122190 Vientiane Domestic Service in Lao
1200 GMT 13 Sep 90

[Text] According to a recent report from Oudomsai Province, approximately 9 percent of the population, mostly in the mountainous areas, of La District have contracted malaria. Blood tests indicated that 85 out of 865 people in (Houai Nam La) and (Phavi) cantons of the district have contracted the disease. In addition, medical cadres from the malaria office also distributed medicines to the people in the district. Over 1,500 children in Mouang Sai District have been vaccinated against six common diseases.

THAILAND

Record Dengue, Meningitis Outbreak in Chiang Rai

90WE0313C Bangkok SIAM RAT in Thai 23 Jul 90 p 5

[Excerpt] [passage omitted] Dr. Chamnan Hansutthiwetkum, the acting public health officer in Chiang Rai

Province, said that from March 1990 to 19 July, a total of 604 people in Chiang Rai Province had contracted dengue. Of these, two have died. The districts with the largest number of cases are Thoeng District, with 164 cases, and Muang District, with 111 cases. Seven cases have been reported in Mae Sai District. These statistics are higher than those for last year. During this same period last year, there were only 81 cases of dengue. There were only 180 cases during the entire year, and only one person died. Most of the patients this year as well as last year are children between the ages of 7 and 14. However, this year, many of the patients are between the ages of 60 and 80.

Dr. Chamnan said that besides dengue, there has also been an outbreak of meningitis. During the period January to 19 July 1990, 27 people contracted with this disease, and six have died. In 1989, there were only 39 cases the entire year, and only seven died. Thus, this year's outbreak will be much worse than last year's. Meningitis is a more serious disease than dengue. [passage omitted]

Dengue Incidence in Lamphun, Nationwide

90WE0313F Bangkok MATICHON in Thai 29 Jul 90 p 2

[Text] Dr. Anutson Sitthirat, the public health officer in Lamphun Province, said that the Ministry of Public Health fears that more than 300,000 people will contract dengue in 1990. As for Lamphun Province, in 1987, this province had the largest number of cases of dengue, with a total of 577 cases, or 168.17 per 100,000 people. Lamphun Province has made every effort possible to eradicate mosquito breeding grounds. In this, the province has received good cooperation from the schools, volunteers, villagers, and various units. Since January, only 94 cases of dengue have been reported in Lamphun Province, and no one has died. This is 150 times fewer cases than in other northern provinces.

Dr. Anutson said that in the highlands, or hill tribe villages, the dengue situation is not very worrisome, because there are few mosquito breeding grounds. Also, the hill tribes have cooperated well. However, Lamphun Province is continuing to monitor this disease.

Dr. Somsak Worakhamin, the under secretary of public health, talked about the dengue situation nationwide. He said that he has been informed that during the period 1 January to 25 July 1990, a total of 36,822 people contracted this disease nationwide, which is a rate of 66.3 per 100,000 people. During the period 19-25 July, 5,493 people contracted the disease. The largest number of cases, 2,175 cases, was reported in the south. This was followed by 1,918 cases in the northeast, 797 cases in the north, and 603 cases in the central region. A total of 125 people, or 0.34 percent, have died, and 836 people, or 2.3 percent, are in shock.

Health Official Discusses Dengue Fever Incidence in South

90WE0314D Bangkok SIAM RAT in Thai 7 Aug 90 p 5

[Excerpts] [passage omitted] Mr Suthat Ngoenmun, a deputy minister of Public Health, revealed that dengue fever was increasing a great deal throughout the country. Reports from 1 January to 1 August 1990 indicated that there were 42,637 cases. Of these 149 had died. The highest incidence was in the South where there were 181.11 cases per 100,000 people. In the North there were 81.65 cases per 100,000 people, in the Northeast there were 61.03 cases per 100,000 people, and in the central region there were 49.78 cases per 100,000 people.

From examining the dengue fever situation in many provinces in the South, it was found that some provinces had a very high level for their population. [passage omitted]

The deputy minister of Public Health said that in the provinces of the South there were 12,540 cases of dengue fever, and there had been 62 deaths caused by it. The provinces with the highest incidence were Phatthalung Province, Nakhon Si Thammarat Province and Trang Province. [passage omitted]

Expert Comments on Rabies Situation

90WE0350A Bangkok THAI RAT in Thai 23 Aug 90 p 5

[Excerpt] [passage omitted] Dr. Thrawat Hemachutha, a young professor who has been involved with rabies for a long time at the Saowapha Institute and the Faculty of Medicine, Chulalongkorn University, provided details on the new rabies studies.

"The Science Division at the Saowapha Institute has monitored the rabies situation for the past six years. We have found that the number of animals (such as cats, monkeys, and other animals that can spread rabies to people) brought in for examination for rabies has not declined. Each year, the heads of 4-5,000 dogs and other animals are examined, and about 50 percent of these are found to have rabies. This shows that the measures taken to control rabies have not been very effective."

This young doctor, who holds the position of assistant director of the Science Division, Thai Red Cross, and director of the Research Center, and who has conducted studies on rabies in cooperation with the World Health Organization, disclosed some startling figures:

"What is worse is that it has been found that 3-9 percent of the dogs brought in for examination and found to have rabies were vaccinated for rabies within the previous 1-2 years, that is, since 1989. Based on the experiences of the Science Division and the Bamratnaradru Hospital, it has been found that three people died from rabies after being bitten by dogs that had been vaccinated every year. Two of the people who were bitten did not receive injections to prevent contracting rabies, because they didn't think

that they would contract the disease. The other victim began the series of injections the day the dog began showing signs of having the disease. But because the victim did not start receiving the injections until five days after being bitten, the patient died.

"Because of this, I and my colleagues began studying this matter in earnest in order to determine whether the vaccine given to dogs can really prevent them from contracting this disease. We began our study in March 1989 and finished it in June 1990 with the cooperation of Dr. Wira Thepsumetthanon, Dr. Chaiphon Phonsuwan, Dr. Bunloet Lamloetdecha, and Mrs. Phakamat Khaoplot, a scientist who participated in the study. The research team used a foreign vaccine that is used widely and that had been inspected by the World Health Organization. They injected the vaccine in 54 dogs of mixed breed that had never been vaccinated. These dogs were all in good health and were all more than 3 months old.

"After monitoring the dogs for one year, it was found that within 14 days after vaccinating the dogs, four percent of the dogs did not show any build up of resistance in the lymph glands. Even more surprising, two months after vaccinating the dogs, 12 percent of the

dogs who had developed a resistance began losing their resistance. This figure increased to 26 percent after six months and to 42 percent after one year.

"From what we had found, we tried to find a reason for why the dogs that had been vaccinated lost their immunity so quickly. We looked at the age of the dogs when they received the vaccine and health of each dog. We checked the dogs for anemia and parasites in the blood and examined the number of white corpuscles in the blood. No differences were found with respect to the age of the dogs or with respect to dogs having different physical conditions.

"The results indicate that it is important to evaluate the vaccine imported from abroad even though this is the same type of vaccine that the foreign producers have tested on dogs abroad and found that the dogs have a high degree of immunity that lasts at least two years.

"In summary, we still can't explain the reasons for this even though the vaccine used meets the standards and the same vaccination method has been used, that is, the vaccine is injected below the surface of the skin. [passage omitted]

BULGARIA

Private Travel Across Silistra Checkpoint Halted

AU2708141590 Sofia Domestic Service in Bulgarian
1300 GMT 27 Aug 90

[Text] In the last 10 days all private travel across the Silistra border checkpoint has been halted in an attempt to prevent the transfer of cholera viruses into the country. Only transit travelling is permitted. Citizens from the southern Ukraine are not allowed in the country at all. In addition, the import of foodstuffs, with the exception of canned food, has been banned.

Basic disinfection is conducted at the border checkpoint several times a day.

Given this report, it is puzzling that private cars with Romanian registration continue to be seen in the Silistra area and in other parts in the country. Their owners engage in illegal trade.

Romanian Visitors Evade Customs; Cholera Risk Grows

AU2209153490 Sofia BTA in English 2215 GMT
22 Sep 90

["Black-Marketing Romanian Tourists"—BTA headline]

[Text] Ruse—The Romanian citizens keep causing incidents in the central railway station of Ruse. The Romanian tourists, or rather pedlars, made their latest "trick" tonight. One hundred and thirty-four Romanian citizens who violated the entrance regime were taken down from the international Pannonia express train and were returned to Romania. The sole purpose of their trip to Bulgaria seems to be striking bargains in the black market. Other passengers (according to the law-enforcement units they were about 30) jumped off the train before the customs examination, intending to smuggle their goods. After a prolonged chase in the darkness, nine of them were caught. Six Bulgarian gypsies who also preferred to avoid any possible troubles with the customs authorities were also detained.

Thus in the last 24 hours scarce goods amounting to more than 24,000 leva's worth got to the customs warehouse in Ruse. The goods were found in the ceilings of the wagons of the arriving and departing international trains; most of the smugglers are Romanian citizens. According to data released by the local customs authorities, the cases of smuggling cigarettes, alcohol and shoes to the Soviet Union have become more frequent of late.

The Romanian side is not fulfilling the agreement on the temporary restriction imposed on the Romanian citizens' trips to Bulgaria.

The danger of a cholera outbreak is growing, the BTA correspondent in Ruse writes. He adds that the work at the Danube bridge checkpoint has become very difficult.

The Romanian border and customs authorities have reduced almost to naught the passing regime of cars which results in traffic jams, especially in the direction of Giurgiu. People and cars have got to wait for more than 24 hours and the line stretches all along the three-kilometre-long bridge spanning the Danube. Today the jam was especially great, because all of a sudden the Romanian border guards decided to quickly let the passengers cross the border and go to Bulgaria.

Leptospirosis Bacteria Found in Rusenski Lom River

90P20085A Sofia DUMA in Bulgarian 25 Jul 90 p 3

[Article by Tsenka Ginkova: "There Is Dangerous Bacteria in Rusenski Lom"]

[Text] Just a dip in this river is enough to send you to the isolation ward. That is exactly what happened to A.I. and D.Z., who are already in bed there, diagnosed with leptospirosis. This disease is the result of blatant unsanitary conditions and improper livestock management and appears relatively infrequently, but, when it establishes itself, it almost always turns into an epidemic. According to the director of KhEI [Hygiene-Epidemiological Institute] in Ruse, Dr. Konstantin Kolev, the most likely source of the infection is the pig farms, located in the Dolapite and Sredna Kula districts and the village of Ivanovo in the immediate vicinity of the Rusenski Lom River. The river has been polluted by these farms for a long time, and its water is a very toxic and bacteriological danger, in view of which it is risky to use it for swimming, laundering, and washing.

Increase of Hepatitis Cases

AU1809160390 Sofia DUMA in Bulgarian 14 Sep 90
pp 1,2

[Katya Karagyaurova report: "Number of Hepatitis Cases Increases"]

[Excerpts] An increase of hepatitis cases has been registered in 21 of the former okrugs. This was reported at the news conference of the Ministry of People's Health and Social Welfare, which took place on 13 September. The specific illness in question is virus hepatitis A—an intestine infection. [passage omitted]

Some 7,126 cases of hepatitis have been registered since the beginning of the year. During the same period in 1989, 4,789 cases were registered. The increase began at the beginning of the year. It was forecast by the Scientific Institute on Epidemiology and Infectious Diseases. According to the forecast, the number of hepatitis cases in the country will reach 11,000 by the end of the year. [passage omitted]

ROMANIA**Romanian-Bulgarian Talks on Anticholera Measures**

*AU3108083790 Bucharest ROMPRES in English
1814 GMT 30 Aug 90*

[Text] A working meeting took place in Tolbuhin (Bulgaria) between experts of Bulgaria's Ministry of Public Health and Social Protection and of Romania's Ministry of Health. On the occasion the Romanian delegation informed about the cholera cases registered in Romania as well as about the epidemic characteristics.

The representatives of two ministries exchanged opinions concerning the anti-epidemic measures to be taken

in connection with the current epidemic. The mutual accord was expressed regarding the following aspects: the Romanian Health Ministry Preventive Medicine Department will inform every week the Ministry of Public Health and Social Protection about each case of cholera registered; Romanian tourists can visit Bulgaria presenting a certificate attesting that they have no clinical signs of cholera and that no member of their family is contaminated with cholera. The certificate is valid for seven days. This measure will be applied by the Romanian Ministry of Health until the end of the current epidemic. The participants in that working meeting agreed that certain measures such as vaccination and a reduced circulation of foods and drinks of personal usage over the border are not efficient epidemiologically as the who recommendations also specify.

BRAZIL

Hemorrhagic Dengue Epidemic in Rio Feared

90WE0319A Sao Paulo FOLHA DE SAO PAULO
in Portuguese 10 Aug 90 p C-4

[Text] Brasilia—The Health Ministry fears the outbreak of an epidemic of hemorrhagic dengue (Type 2) next summer in Rio de Janeiro. According to Maria de Fatima Brandao Vasconcelos, 39, coordinator of the ministry's dengue and yellow fever program, the mosquito which transmits hemorrhagic dengue (*Aedes Aegypti*) is present today in sufficient numbers to maintain high levels of infection, despite the cold weather. A large increase in dengue is expected in the summer, when the climate is favorable for the reproduction and survival of the mosquito. The major problem confronting the ministry is the shortage of personnel to combat the disease.

According to Maria de Fatima, the Superintendency of Public Health Campaigns (Sucam) has never had enough personnel and, with the administrative reform, the staff has been reduced even further. In Rio alone, 8,000 people would be needed for the program to combat the disease. Today, Sucam has only 1,700 people. Various phases of the work of combating the disease have already been eliminated, including research.

Next Tuesday, Minister Alcení Guerra will sign an agreement with the Rio de Janeiro Secretariat of Health, allocating 900,000 cruzeiros to 11 Rio municipalities to combat dengue. More funds had been expected. Some personnel will be cut.

The first case of Type 2 (hemorrhagic) dengue in the country appeared only in April. To date, five cases have been reported in Niteroi, Sao Goncalo, and the Carioca capital. The major symptoms are body ache, discomfort, high fever, chills, liver involvement, and hemorrhaging. There is no indicated medication or treatment for the disease. Recovery depends on the resistance of the organism.

Dengue is one of the three endemic diseases that are of greatest concern to the ministry, along with malaria and yellow fever. The ministry's goal is to eradicate urban malaria in the next four years, considering it a "national shame." According to Dilermando Fazito Rezende, 46, coordinator of the malaria program, the epidemic of urban malaria is the result of the government's negligence.

To eradicate urban malaria, 3,000 tons of D.D.T. insecticide have already been purchased and an education program will be conducted. The goal is to reduce the number of cases from 590,000 (this year) to 100,000 in 1994. According to Fazito, it is already impossible to combat malaria in the jungle regions and in the gold fields. "The costs are prohibitive."

Health Accords With Cuba Discussed

90WE0319B Brasilia CORREIO BRAZILIENSE
in Portuguese 28 Jul 90 p 18

[Article by Danubio Rodrigues]

[Text] The Brazilian Government is interested in signing agreements with Cuba in the health area and already has the approval of the Ministry of Foreign Relations to do this. However, the matter is still in a very early stage. Health Minister Alcení Guerra has told CORREIO BRAZILIENSE. He added that Akira Hommo, director of the Immunological Self-Sufficiency Program in his ministry, who is attending a conference in Washington, already has express orders to "go to Havana and study the possibility that the two countries could form a 'joint venture' for the manufacture of a vaccine for Type-B meningitis."

Jorge Albero Bolanos, the Cuban ambassador, met with Minister Alcení Guerra this week and made it clear that Fidel Castro has an "extraordinary interest" in forming associations with Brazil, and not only in the health sector.

In that conversation, considered very cordial and open to various possibilities, it was suggested that, in the health sector, the two countries could reach an understanding "on pragmatic bases and to the benefit of both parties." Minister Alcení Guerra, who, like Chancellor Francisco Rezek, his colleague in the Foreign Relations Ministry, is considered highly competent, feels that "it is possible" that Brazil and Cuba will come to form "joint ventures." The health minister is constantly concerned about the health situation of the population and, in the case of meningitis, he feels energetic action is urgently needed to rid us of this disease. To this end, he will go to Tabatinga, in the Amazon Region, in early August to inaugurate a new offensive against meningitis and other illnesses.

According to the minister, Akira Hommo's trip to Havana is essential, to learn what subsidies and proposals the Cuban authorities might offer, including the possibility of joint ventures. The visitor will be received by Julio Teja, Cuban minister of health, who could come to Brazil if the two countries reach an understanding. The Cubans are even interested in exchanging technology.

Incidentally, Cuban technologists are in constant contact with their colleagues in the Osvaldo Cruz Foundation in Rio de Janeiro and, according to the health minister, this is already a step toward closer cooperation between the two countries.

DOMINICAN REPUBLIC

17 Cases of Typhoid Reported

90WE0294A Santo Domingo *EL NACIONAL*
in Spanish 26 Jul 90 p 9

[Article by Antonio Caceres]

[Text] Another 17 cases of typhoid have been identified in La Cienaga in the past three days, in the course of the medical aid and decontamination operation launched in this sector on Monday.

These cases were detected in only one of the four consulting offices established by the authorities within the framework of this operation designed to deal with the outbreak of typhoid fever in La Cienaga under control.

Luis Mendez Pumarol, a physician in the public health system, said that four of the 17 patients diagnosed between Monday and today have been treated. The others are new cases.

Dr. Mendez Pumarol said that between Monday and today, 764 persons were seen at the first and second consulting offices located on La Marina Street in La Cienaga.

He explained that the patients had various diseases, the majority of them viral. Principal among them, apart from typhoid fever, were influenza and parasitosis.

Dr. Mendez Pumarol said that the 17 cases of typhoid detected were clinically diagnosed and subjected to clinical analysis processes.

He said that as a means of checking on patients with the disease, they are only being given half of the treatment, so as to force them to return to the doctor until they are healthy.

He said that this outpatient treatment is yielding results, and that the patients are being provided with the necessary medications.

The health authorities are waiting for reports from the other two medical consultation camps set up in La Cienaga in order to make an overall evaluation of the operation, to which physicians and first-aid personnel from the Civil Defense and Red Cross organizations are contributing.

It is presumed that other cases of typhoid identified between Monday and today at these consulting offices will have to be added to the 17 cases diagnosed in the first and second camps.

To date, only five typhoid fever patients have died, according to the official reports, and dozens of patients have been admitted to the public hospitals and private clinics for care.

All of the physicians consulted gave assurance that cases of typhoid are being found nationwide. Patients from

various locations suffering from this disease have been treated at the various public hospitals in the capital.

However, the largest number of cases are occurring in La Cienaga, where the existence of an outbreak of typhoid has been officially declared. This led President Joaquin Balaguer to order a medical assistance, sanitation, and sewage drainage operation in this sector, which is located on the western bank of the Ozama River, between the Duarte and Sanchez bridges.

ECUADOR

Onchocerciasis Causing Blindness Among Cayapas Tribe

90WE0315A Lima *EL COMERCIO* in Spanish
12 Jul 90 p A-6

[Report by Napoleon Narvaez]

[Text] Children, young people and the elderly in Cayapa communities, both blacks and Onzole River residents, are becoming increasingly affected by onchocerciasis, caused by the sting of the so-called "similiaun" insect, which injects a microorganism directly affecting the vision organs.

In recent years the Cayapas, also known as the "Chachis," have suffered from malaria, tuberculosis, paragonimiasis, and other tropical diseases.

The inhabitants of northern Esmeraldas near the mouth of the Santiago river live by fishing and farming. Several areas are locked into poverty, malnutrition, disease and lack of health and sanitation assistance.

Doctors have determined that in that region the "similiaun" fly multiplies at a high rate, feeding on blood, and when biting depositing under the skin a germ that reproduces at a dizzying rate, disseminating its larvae throughout the entire body, and finally arriving at the eyes to produce irreversible blindness.

The Cayapas and people of color refer to the fly as the "juro"; they fear its presence, and flee from it in terror.

The World Health Organization, WHO, states that the places most heavily affected by onchocerciasis are Central and West Africa, Central America and some southern areas such as Venezuela, Colombia, Brazil and Ecuador.

The fly carrying onchocerciasis can move through an area 150 km in diameter, and its incubation is rapid and numerous. It reproduces in swift-moving and oxygen-rich waters and lives in stagnant, slow-moving areas.

Onchocerciasis is also known as "river blindness." The greatest concentration of victims is in Burkina Faso, Ivory Coast, Ghana, Niger, Togo and the Upper Nile.

A group of doctors from Vozandes hospital, led by Ronald Guderian, has studied 33 rivers, 138 communities and more than 15,000 inhabitants, and has found that 754 victims of the disease are at serious risk of becoming blind.

Not all are blind yet, but counting all those stung the number could increase to 2,000. Onchocerciasis victims can be found along the Onzole, Bogota, Verde, Sucio and other rivers.

Fifteen concentrations of infection have been found and attempts are being made to eradicate them through fumigation.

Gracia Diaz, coordinator of the Ministry of Health's tropical disease control program, said that the 754 victims in the Cayapa and black communities in northern Esmeraldas have been under treatment by Ministry specialists.

They have been applying ivermectina, a new product strongly recommended by the World Health Organization, which is administered in one single dose annually, facilitating its widespread utilization in the endemic zones.

The other treatment being used is CGP61-40 (amorvacine), which is administered yearly, and requires three days of treatment and hospitalization.

The expert stated that the two methods of treatment are utilized separately and have produced good results until now, with minimal side effects.

Gracia Diaz noted that before the introduction of these medicines treatment involved removing the visible nodules containing the adult worms of the parasite.

The disease produces blindness because the worm in its larval (microfilaria) state attacks the eyes in particular.

She stated that through treatment and removal of the nodules the larval population declines, preventing the disease from advancing to the advanced state characterized by blindness.

The aforementioned treatments are performed by the team of researchers from Vozandes hospital, the Comboniana mission, and local Ministry of Health representatives, in addition to new national resources comprised of both doctors and nurses.

The leaders of the "Chachi" or Cayapa tribes, Santiago Onague and Jose Chapiro, have requested that Ministry of Health officials assign greater priority to the onchocerciasis problem. They point out that it is distressing to see children, young people and the elderly blind and wandering among the tribe's houses, bereft of hope and lacking fixed goals in their lives.

INDIA

Concern over Cholera Cases Reported from Various Areas**Cases on Andamans-Bound Ship**

90WD0568 *Calcutta THE TELEGRAPH in English*
10 Jul 90 p 1

[Article by Sanjoy Basak]

[Text] Two persons died and five others were taken seriously ill in a cholera outbreak aboard an Andamans-bound ship in the Bay of Bengal late last week.

The two victims—a 13-year-old girl and a young woman in her early 20's—were buried at sea. The others have been hospitalised at Port Blair and are in critical condition.

The tragedy took place aboard the M.V. Harshavardhana, a Shipping Corporation of India vessel which sailed from Calcutta on Thursday night with 750 passengers on board, and reached Port Blair on Sunday morning. Thirteen-year-old Payro Kumar died on Friday night, and 23-year-old Precila Ekka succumbed to the disease the following day.

A SCI spokesman told THE TELEGRAPH that the corporation's office here was still in the dark about the identity of the five passengers hospitalised in the Andamans. But he added that it was believed that the majority of those on board were inhabitants of the islands. There was no word yet, he said, about any Calcuttan being among those affected.

This is the first time that a cholera outbreak has taken place on board one of the SCI's ships.

The spokesman said that only 7 of the 597 bunk passengers had been affected by cholera, and there had been no complaints from the other passengers. The SCI was not rushing any medical experts from the mainland, he added, as the doctors at Port Blair were "efficient enough."

The SCI spokesman said the source of the disease was yet to be established. The ship has now been completely abandoned and a team of local port health officials was inspecting it to establish the source of the disease. Food and drinking water samples had been taken for examination. The spokesman added that the SCI would conduct a departmental inquiry only after the return of the ship and after the test reports from Port Blair were available.

The SCI authorities suspected that as the affected persons had reported sick less than 24 hours after the ship had set sail, they had contracted the disease before boarding. "The time gap was too small to contract the disease on board," the spokesman said.

At the same time, he pointed out that all passengers had been medically cleared by port health officials belonging to the mercantile marine department of the Union government. The officials had also checked food samples and the cleanliness of the food storage areas on board. "Only after these clearances did the ship sail."

The drinking water on board, the SCI spokesman said, had been supplied by the Calcutta Port Trust and the Calcutta Municipal Corporation, and "there was no provision for checking" this.

The ship sailed around 9 p.m. on Thursday. The following morning, seven of the bunk passengers reported sick. The captain, Mr H.B. Roy, in a message to Calcutta, stated that there was "an outbreak of gastroenteritides. The same evening, Payro Kumari, the 13-year-old girl, died, and it is reported that with the consent of her family members, she was laid to rest near the Sandheads.

Cases in Old Patna

90WD0568 *Calcutta THE STATESMAN in English*
5 Jul 90 p 7

[Text] Patna—Over 200,000 people in the old township of Patna are threatened with Cholera which has taken an epidemic form during the past 4 days. The disease, which was first noticed in old Patna city a few days ago, had spread to the entire area affecting more than 10,000 people, including children. With the total failure of the State administration in containing the disease, the epidemic has already claimed more than 70 lives.

The chief minister, Mr Lallu Prasad Yadav, who never forgets to carry a battery of journalists and photographers whenever he visits hospitals and other establishments on his much publicized "surprise raids," was said to be sleeping this afternoon when this correspondent tried to contact him. "Mukhya Mantri abhi so rahe hain" (The chief minister is sleeping now the officials said. It was exactly 12:30 p.m. at No. 1 Anne Marg, the official residence of the chief minister, Mr Yadav's ministerial colleagues too were having a quiet day, today being a holiday in the offices of the government. There was no official of the Health Department to comment on the number of casualties and the people affected.

The Nalanda Medical College Hospital was finding it extremely difficult to admit patients owing to shortage of space and drugs. The doctors at the emergency ward threatened to stop treating patients since water and power supplies to the hospital were disconnected and despite the critical situation they were not restored for 30 hours.

A visit to the hospital showed that scores of patients were lying on floors. In Patna Medical College Hospital doctors were facing hostile and irate relatives of the patients for their failure to provide life-saving drugs. The doctors blame the government for not providing essential drugs like antibiotics, even saline water was not available.

With the onset of the monsoon, the State capital has turned into a veritable hell. Streets and lanes are littered with garbage and filth. Carcasses have been dumped on street corners. What the government needs is roughly 400 labourers to lift and clear the garbage in 2 days. But the government has neither the will nor the competence to meet the challenge.

The disease, which is now claiming its toll in more congested localities, is likely to spread to some posh areas also. Reports reaching here said that cholera has already spread to Muzaffarpur and the mofussils of Patna districts like Phulwari Shariff and Fatuha.

Despite the State Health Minister, Mr Raghu Nath Jha's claim that bleaching powder has been sprinkled and drinking water sources are being treated with chemicals, there was hardly any sign of cleanliness in the affected areas. Chemical tests of tap water being supplied in the State capital showed that the water is "unsafe."

Cases in Durgapur

90WD0568 Calcutta THE STATESMAN in English
9 Jul 90 p 7

[Text] Durgapur—Cholera has claimed five lives at Raghunathpur village near steel town in last 48 hours. Confirming this, Mr Debabrata Banerjee, vice-chairman of the Durgapur Notified Area Authority (a government-appointed body for looking after the civic amenities) said yesterday that four more people were attacked by the disease were taken to hospital.

The source was yet to be identified he said adding that a medical team from DNAA has been sent for taking precautionary measures. A number of gastroenteritis cases have also been reported from Amrai and Kururi-adanga villages, according to him.

Bihar Government Suppresses Delhi Report on Cholera

90WD0666 Calcutta THE TELEGRAPH in English
24 Jul 90 p 5

[Text] Patna—The disease that has claimed a number of lives in parts of the state capital and adjoining areas, has turned out to be cholera and not gastroenteritis as publicised.

A team of experts from the National Institute of Communicable Disease in Delhi has found the "cholera vibrio" bacteria in 100 samples of "rice water stool" collected from the affected areas. The team firmly believed that the epidemic was not gastroenteritis as claimed by the state government but the deadlier cholera.

The government, however, still maintains that the outbreak is not cholera and, according to sources in the health department, has suppressed the report of the team, which was submitted to the state chief secretary and director of health services.

Earlier pathological examinations by doctors at the state's public health institute could not detect the cholera bacteria from samples. The doctors argued that since most patients had taken antibiotics, the bacteria had been suppressed.

The removal of garbage, the spraying of bleaching powder and cleaning operations ordered by the state government, supposedly on a war footing, have so far remained mostly on paper.

JORDAN

No Cholera Cases at Jordanian Border Camps

JN0809160390 Amman PETRA-JNA in Arabic
1415 GMT 8 Sep 90

[Text] Dr Muhammad Siyaj, officer in charge of the Jordanian Red Crescent medical team operating in the al-Ruwayshid area, has said that there have been no cholera cases in any of the relief centers at the Sha'lan-I and al-Ruwayshid camps.

He told PETRA that the team provides medical services to between 1,500 and 2,000 of the evacuees from Iraq daily.

He said the afflictions are mostly headaches, sunstroke, inflammation of the upper respiratory tract, asthma, scorpion bites, medium diarrhea, epilepsy, severe cuts, bruises, and arthritis, and various other conditions at the rate of 10 to 15 cases requiring hospitalization—including some childbirths.

Health of Al-Azraq Camp Refugees Said 'Excellent'

JN2509155790 Amman PETRA-JNA in Arabic
1435 GMT 24 Sep 90

[Text] Bassam al-Hadid, director of the Jordanian Red Crescent Society's camp for the relief of the evacuees in al-Azraq, has stated that the health conditions of the residents of the camp are excellent and that there are no infectious diseases. He said that the camp is equipped with electricity and water.

He also said that the camp medical team and its field hospital are providing the best health services for the evacuees and that cases needing treatment are taken to the al-Zarqa' government hospital. He added that the camp relief teams are performing their daily work regularly and around the clock in order to serve the evacuees.

He added that the camp includes evacuees from Bangladesh, Sri Lanka, and the Philippines, that the newcomers are distributed according to their nationalities, and that evacuees of the same nationality are allowed to stay together in order to facilitate services and travel. He noted that the camp was designed to accommodate 30,000 evacuees, served by several relief crews. He said that the president of the Jordanian Red Crescent Society has stipulated that these teams should perform their

work under the management of the vice president of the society, who is entrusted with the task of supervising the relief process.

LEBANON

Health Official Denies Cholera Epidemic in North

NC2808090490 *Ihdim Radio of Free and Unified Lebanon in Arabic* 0600 GMT 28 Aug 90

[Text] Dr. Samir Kabbarah, head of the health department in the North, has denied that there are cholera cases there. He explained that patients were treated in the hospital for severe diarrhea and vomiting and that laboratory tests did not indicate cholera.

Cholera Kills 7 in Tripoli; 29 Hospitalized

NC0709101590 (*Clandestine*) *Radio Free Lebanon in Arabic* 0445 GMT 7 Sep 90

[Text] AFP has cited medical sources in Tripoli as saying that seven people died of cholera in the epidemic that broke out two weeks ago in the working-class neighborhoods of Tripoli and its suburbs. The sources disclosed that 29 people are undergoing treatment for cholera in various hospitals.

Dr. Samir Kabbarah, a Health Ministry official in the North who had earlier denied the existence of that epidemic, admitted to AFP that cholera has spread into the town. Kabbarah has alerted the ministry's organs that a state of emergency has been declared in the North.

Medical sources explained that the epidemic is due to the leakage of sewage water and its infiltration into the city's worn-out system of drinking water.

Cholera Victims Reported in Tripoli, Other Areas

NC1209085190 *Beirut Voice of Lebanon in Arabic* 0715 GMT 12 Sep 90

[Text] The cholera epidemic continues to threaten the life of citizens in the North despite the operations to combat the epidemic and the state of emergency that was declared by the competent authorities there.

Citizen Hasan Hafizah died two days ago. Five new cases were reported in Tripoli and 'Akkar, and seven others were transferred to the al-Islami and al-Mullah hospitals. Two more cases were taken to the government hospital in al-Qubbah and one to the al-Mazlum hospital.

PAKISTAN

Editorial Urges Scrutiny of Food, Medicines Packaging

90WE0338B *Islamabad THE MUSLIM in English* 22 Aug 90 p 4

[Text] Any one in Pakistan is free to package or can any food item or bottle any drink, mount a big publicity offensive with song and dance on PTV, place them on the market and sell to the brainwashed consumers. Among the buyers of such items, which are neither scrutinised before they are placed in the market, nor tested from time to time, the major chunk are the children, who are easily influenced by such ads. This is contrary to all the norms in modern states which test such canned and bottled food and drinks long before they are brought to the market and later scrutinise them from time to time.

The country has the Pakistan Standards Institution, the Pakistan Council of Scientific and Industrial Research and the Health Ministry with its provincial equivalents and their laboratories to test medicines. But none of them have cared to prevent the sale of injurious food and drinks manufactured by the various industries which have come up, and smaller outfits which have entered the field disdainful of all norms of precautions. Repeated appeals to successive governments for effective checks in this sphere have proved futile despite the grave hazards of such gross neglect.

The Pakistan Standards Institution has now urged the government to scrutinise the manufacture and sale of such food and drinks, prescribe standard norms and punish all violations. In fact, because of the absence of any check, all kinds of unscrupulous elements are entering this market and endangering public health. The Standards Institution has also urged banning the manufacture and sale of 'Shahi Supari,' 'Pan Masala,' 'Mixed Masala' etc. As they are injurious to public health, the government must act now and check the rising abuses in this vital sector.

Tick-borne Encephalitis Epidemic in Novosibirsk Oblast

90WE0266A Moscow IZVESTIYA in Russian
18 Jul 90 p 3

[Article by A. Illarianov: "Attacks on Encephalitis"]

[Text] Novosibirsk—Academy city in the summertime, filled with resinous smell of pine and the aroma of various grasses, would seem to beam only with health. If it only were not for one detail: the level of tick-borne encephalitis (TE) is the second highest, on the average, in the oblast, and this year will reach record proportions. So far there have been about three thousand tick bites suffered by persons here, and the number of patients will near 80,000.

One will recall that three decades ago it apparently never occurred to any of the city planners that they were erecting a scientific city directly on the breeding grounds of tick-borne encephalitis, an acute viral disease of the brain. By a twist of fate this occurred on the occasion of the twentieth anniversary of the discovery of the viral nature of TE in the USSR by an expedition of the USSR People's Commissariat for Health, headed by the eminent Soviet virologist L. Zilber with the participation of Ye. Pavlovskiy who established the teaching about the natural breeding grounds of diseases.

The first settlers of Academy City will recall the great numbers of Taiga ticks they picked off themselves and the rubbing alcohol they smeared on themselves to soothe the wound bites and did not attribute to much significance to this. In those years the disease focus was only smoldering and it was difficult to guess that a disease conflagration would ensue.

The fact that the great mathematicians and engineers who founded Academy City, in accord with concepts of that time, had no idea about arranging for an ecological expert evaluation of construction sites, was not at all surprising. (On the other hand they took a spirited attitude toward the forest and its inhabitants: i.e., they were elementary ecologists).

Another thing is surprising: i.e., the insidious agents that were used at one time to control the viral carrier. The surrounding woods were heavily dusted. In the meantime the biologists and chemists of the city could not then know about the long-term dangerous consequences for the public's health. And even then there were some doubts about the effectiveness of this kind of treatment. One of the first builders of Academy City conducted a very simple experiment. He placed some Taiga ticks overnight into a jar with the chemical dusting agent, and found that they crawled out of the jar in the morning live and unharmed. A little later science learned how easily the tick can adapt itself to stronger insecticides.

But as far as the use of dust is concerned, the Ministry of Health is somehow able to justify by a most strict diktat. But how does one justify the other "experimental"

method to control the Taiga tick? The former head of the forest experimental station of Academy City candidate of biological sciences M. Bannov, most enthusiastically embarked upon the scorched earth tactic. He organized the burning of forest bedding by the use of gas torches, thereby essentially creating local ecological disasters. This, incidentally, did not prevent the tick from rapidly resettling in the scorched earth.

These are only a few costs of ecological somnolence. Up until recent times there has been a strange conviction that by acting decisively and vigorously, the Taiga tick can be eliminated once and for all. Fortunately, in this regard the attempt to turn the area around Academic City into a desert was not successful.

Before undertaking extensive and precipitous action, one should in any case find out exactly what a tick is. Even the naive persons who have been trying to control the tick would find out that this minute spider-like creature lives not so much by its amazing endurance (something like a zoological micro-tank), but rather by its amazing adaptability to the environment. Ticks have easily survived great geological and cosmic catastrophes and have successfully inhabited almost all the climatic zones and continents of the globe, besides the Antarctic.

The Taiga tick with the passage of time has so thoroughly become entrenched into the forest community, that it can hardly be eradicated without destroying the latter.

But every cloud has a silver lining. If, by the will of fate Academy City has turned out to be located in a breeding ground of tick-borne encephalitis, we are obliged to the appearance of the country's first radical agent that can destroy a dangerous virus. The enzyme ribonuclease, synthesized previously by associates at the Institute of Cytology and Genetics, facilitates the decomposition of the genetic substance of the TE virus. Its industrial manufacture has now been established. It has been accepted by the medical profession. But no real turning point in the battle against TE, unfortunately, has yet been reached.

After having reviewed the consequences of tick-borne encephalitis, associates at the Institute of Bioorganic Chemistry took up this problem. They decided to approach the problem from another angle. They decided that they would try to learn quickly whether or not the tick that bites humans is infected. Here a rapid method was designed at medical institutions of Academy City to detect the virus in an extract of a tick that has sucked human blood.

This too will help medical personnel at Academy City to distribute correctly anti-encephalitic human gamma globulin that is in short supply, but which is so far the only specific preventive whose effectiveness depends on the rapidity with which it is employed following a tick bite.

Hospital physicians have complained to me that well educated inhabitants of the scientific center have been

thoughtlessly ignoring appeals directed to them to be vaccinated in good time with the available anti-encephalitis vaccine. True, it turns out that this has not only been a case of thoughtlessness. A vaccine comprised of a "dead" virus that is being given today cannot provide a reliable immunological protection for many years. Inoculations have to be repeated year after year, and they are often painful.

Over a period of ten years inhabitants have had to take 15 inoculations. That is why they prefer to avoid them.

Is it not paradoxical that the most reliable and long-term immunity is acquired by a person who has been afflicted with a light form of tick-borne encephalitis, and who possibly wasn't even aware of the infection.

How should we proceed?

Novosibirsk biochemists believe that scientists are still confronted by a difficult task—that of developing a more effective "live vaccine" based on a fully safe attenuated viral strain of tick-borne encephalitis.

But before we conquer the virus there is the more important and fundamental need to somehow overcome our more dangerous ecological ignorance that is so prevalent in our country. There is hope. There are increasingly larger ecological movements and organizational measures taking place. In particular, an informal long-term scientific collective of biologists for the study of TE breeding grounds and methods for protection against them has been organized in Academy City and is functioning actively.

A proponent of this collective, associate of the USSR Academy of Sciences Siberian Branch Institute of Biology A. Dobrotvorskiy, told me that the collective's purpose is to coordinate the research and efforts of the institutes of the branch as well as those of scientists at other regions and departments. The biologists believe that science today is capable of discovering the characteristics underlying the variable development of TE breeding grounds if the efforts of academic and industrial science as well as practitioners at the medical epidemiological stations are united to resolve this labor-intensive problem. It turns out that the more natural the protective means employed against the Taiga tick, the more reliable will such methods be. For example, an ant hill a cubic meter in volume over a period of 24 hours can destroy more than 200 saturated tick females. But, it turns out that the number of ant hills at Academy City and its environs has been drastically reduced in recent decades as a result of poorer forest maintenance.

Moscow investigators have been studying the volatile emissions of widespread and simple plants that repel ticks. So why not sow those plants along road and paths in the city and its environs?

Tick-borne encephalitis, agree the medical personnel, is increasingly becoming a disease of city dwellers who are without immunity and are situated in the breeding zone.

In consideration of this, doctor of biological sciences Yu. Ravkin has proposed his own model of an anti-tick suit that is lighter and more convenient than earlier known models. Its clever design is based on the fact that it has a continuous cover of inverted pockets. Once a tick gets onto this suit and attempts to climb upward, it is restrained in the pocket-traps.

The last examples lead us to a simple and natural conclusion. As the biochemists are devising reliable preparations to block the development of the virus in human beings, we should not wait for the results of their research, but rather employ the reliable and simple protective measures that are available today.

And if one recalls that not only Academy City is situated in tick-borne encephalitis breeding grounds, but many other large and small cities such as Vladivostok, Tomsk, Perm, Leningrad, recreation areas such as the Teletsk Lake and Samar Luka, and economic developmental zones such as BAM, involving millions of square kilometers of territory, then the importance of the simple and available ecological methods of protecting ourselves against ticks becomes even clearer.

Diphtheria Cases Rise in Army as Inoculation Declines

PM2109104390 Moscow KRASNAYA ZVEZDA
in Russian 13 Sep 90 First Edition p 4

[Answer to reader's question by Medical Service Major General V. Perepelkin, chief epidemiologist of the USSR Defense Ministry: "This is What Needs to be Done"—first two paragraphs are reader's letter]

[Text] **Reader's letter:** "According to the newspapers, the incidence of diphtheria has increased in a number of areas. Have there been any cases of this disease among military servicemen?"

[Signed] R. Lyamin, Astrakhan.

Medical Service Major General V. Perepelkin: "Diphtheria cases have mainly been recorded in Moscow. As of the beginning of September, 171 servicemen in the capital had contracted the disease—five of them fatally.

One of the main reasons why people are contracting diphtheria is that the inoculation rate among teenagers is poor. According to data from research conducted in 1985-1988, the percentage of draftees not protected against the disease was as follows: 35 percent in central oblasts; 42.4 percent in western oblasts; 43.5 percent in southern oblasts; 34.9 percent in northwestern oblasts; 34 percent in eastern oblasts; 68 percent in Georgia; 65 percent in Armenia; 55 percent in the Ukraine; and 63-67 percent in the Central Asian republics.

There have been no substantial improvements in recent years. For example, a study of draftees arriving in the Moscow Military District in 1989-1990 showed that as many as 70 percent of them did not have medical

certificates confirming that they had been revaccinated at the age of 16, i.e. had had a booster shot against diphtheria. In view of all this, since 1987 the Army and Navy have inoculated young recruits against diphtheria if they have no revaccination certificate or if they are sent to unfavorable regions.

Finally, angina symptoms, severely inflamed tonsils, and a high temperature are all characteristics of diphtheria. In the event of these symptoms appearing, patients must undergo urgent medical examination and be admitted to a military hospital infectious diseases department."

Outbreak of Plague Averted in Central Asia

LD3008175690 Moscow TASS in English 1731 GMT
30 Aug 90

[By TASS correspondent Vladimir Ganzha]

[Text] Alma-Ata—The threat of plague no longer looms over vast tracts of desert and semi-desert zones in Kazakhstan, a Soviet Asian republic.

Expeditions of scientists from the Central Asian Anti-plague Research Institute have successfully destroyed the sources of the infection with the help of chemical preparations. Owing to these measures, a massive outbreak of plague has been prevented across a vast territory stretching from the Caspian Sea, to the Volga's lower reaches and mountain ridges in Kopetdag, Pamir and Tien Shan, an area with a population of over 30 million people.

Two cases of plague were registered in Kazakhstan. One patient died because local doctors were late in diagnosing his condition, the other was saved.

"We forecast the aggravation of the epizootic situation in Soviet Central Asia and Kazakhstan late last year. We used a computer analysis of fluctuations in solar activity, the projected weather conditions and some other natural factors," Professor Vladimir Stepanov, director of the Anti-Plague Institute, told TASS. "As a result we were able to prepare for the outbreak of plague among rodents, which threatened to spread to people."

In addition to chemical prevention measures, vaccines were administered to more than 100,000 cattle breeders, hunters, fishermen and prospectors, who were particularly vulnerable. A live plague vaccine, developed at the institute created 40 years ago outside Alma-Ata, was used for this purpose.

Bubonic Plague Confirmed in Kazakhstan

PM1709105590 Moscow IZVESTIYA in Russian
14 Sep 90 Morning Edition p 6

[Report by own correspondent V. Ardayev: "Was There Really Plague in Guryev?"]

[Text] Alma-Ata—In a July item under the "Direct Line" rubric our newspaper, citing Ya. Klebanov,

Kazakh SSR [Soviet Socialist Republic] chief hygiene officer, denied the reports of some mass media that bubonic plague had been diagnosed in a sick boy in Guryev Oblast.

The reply received by our correspondent sounded unambiguous: It was a false alarm. The boy simply had enlarged lymph nodes. God forbid, as they say... But a little while later KAZAKHSTANSKAYA PRAVDA published an item by a KAZTAG correspondent: "Bubonic Plague: How To Guard Against It?" The article, citing Professor V. Stepanov, director of the USSR Health Ministry Central Asian Anti-Plague Scientific Research Institute, mentions two cases of bubonic plague this summer. Both in Guryev Oblast and it is specified that one case has already had a fatal outcome. Where is the truth? I had to ask Ya. Klebanov for further elucidation.

"Two cases of plague were indeed recorded in Guryev Oblast this summer," Yakov Arkadyevich admitted. "In the first case the patient was hospitalized with an utterly different diagnosis and so the treatment was correspondingly different. And only after his death, during the patho-anatomical study, an analysis of dead tissue showed the presence of the plague pathogen [vozбудitel]. I should immediately make it clear that this fact has absolutely nothing to do with us at the Kazakhstan Health Ministry—the patient was admitted to the railroad hospital and, as you know, that is an independent medical department..."

"As for the second case which is already known," Ya. Klebanov continued, "it remains controversial. The 'bubonic plague' diagnosis was made for the child during an initial examination by a feldscher and was not confirmed subsequently. It proved impossible to determine whether he really had the plague because by the time a special examination was carried out special medicines had already been used which were able to destroy the infection in the bud, so to speak... We carried out all the necessary quarantine and anti-epidemic measures. As for the boy, he was discharged from the hospital long ago and as far as I know is well."

In fact "did the boy really exist?..." But is the danger as unreal, as illusory as that? The above-mentioned interview with Professor V. Stepanov mentions that the forecast for 1990 warned that this summer an outbreak of very serious disease should be expected among the rodents within an enormous region including the territory of all the republics of Central Asia and Kazakhstan. And the forecast proved correct: In Kazakhstan alone plague appeared among rodents on the territory of six (!) oblasts. And the republic's population, the public, learned of this at the height of summer, not before the summer for which this "peak" was predicted.

As regards the "railroad" case we can only gesture helplessly. How much time did the plague victim spend in a ward with other patients, receiving common food, treatments, and so forth? This incident occurred a

month earlier than the next one involving the little boy but it was made known to the press far later and to all appearances only fortuitously—why? Is it not clear that the widespread notification of the population regarding such cases is one of the best ways of preventing epidemics? There are many questions, but which department should they be addressed to: the republican or union health ministry or... the Ministry of Railways? One thing is obvious: Our doctors still prefer to conceal from people information which affects their health and even lives most directly.

Aralsk Plague Epidemic Kills One

*LD1809073790 Moscow World Service in English
0700 GMT 18 Sep 90*

[Text] An outbreak of the plague has been registered in the town of Aralsk, in Kazakhstan.

One of the two people affected has already died; three-hundred- and-forty people who were in contact with them have been hospitalized. Aralsk has been placed under quarantine, medical posts set up, and offices closed.

Specialists say the cause of the disease was eating camel's meat, the meat

'Strict Quarantine' Continues in Aralsk

LD1909124290 Moscow TASS International Service in Russian 1105 GMT 19 Sep 90

[Text] The strict quarantine declared in connection with the appearance of plague in the town is still in force. Some 237 people who have been in contact with those already diagnosed as having the illness have been isolated. Thorough medical supervision has been set up for those in the isolation ward.

Doctors have arrived from Alma-Ata and Tashkent. One hundred and ten medical workers are carrying out rounds at houses, while about 100 have been sent to work in hospitals. Numerous loads of foodstuffs and medicines are arriving.

A special disinfection of the town's territory is being carried out. About 300 camels have been treated, and the goal is to urgently protect all animals against infection. More than 10,000 animals are in the area. Internal Affairs administration personnel are checking that quarantine requirements which will be effective until 23 September are observed, was traced down and destroyed.

Volga, Kuybyshev Reservoir Contaminated

*90US1262A Moscow IZVESTIYA (Morning Edition)
in Russian 14 Aug 90 p 2*

[Report by IZVESTIYA staff correspondent S. Zhigalov: "After the Accident in Tolyatti"]

[Text] Kuybyshev Oblast—The accident in Tolyatti has created a threat of bacterial contamination of the Volga.

The accident occurred during repair work at the municipal purification facilities. A valve nozzle broke off, and the gushing stream flooded the sewage treatment station of the Volga Automobile Plant, which treats production and fecal wastes of the Avtozavodskiy Rayon.

Thousands of cubic meters of raw discharge (4-6 cubic meters per hour) gushed into the Kuybyshev reservoir. The danger of contamination of the reservoir's water supply by pathogenic microbes arose. To reduce the volume of untreated waste, the supply of drinking water in the rayon was suspended.

...And once again, there came the need for heroism while overcoming the accident. This time, the difficult mission befell the divers. They eliminated the consequences of the accident by diving under water for 3-5 minutes under the most difficult conditions, and at risk to their health.

The supply of drinking water to the city is now being restored.

The equipment commission is faced with determining how it happened that the Volga was polluted by a nozzle costing just a few kopecks.

"Since the accident, when using untreated Volga water, the probability of acute gastrointestinal illnesses has increased," thinks V. Zhernov, deputy chief physician of the oblast epidemiology and public health station. "Yet there is no knowing whether the accident will cause a rash of such illnesses. The incubation period of hepatitis, dysentery, is 30-40 days. To avoid extreme situations, superchlorination of the water has been started, and intensified lab monitoring of its condition is being conducted."

According to some reports, the dirty spot is "walking" about the reservoir for the time being; according to others, it has already passed through the locks of the Volga GES [hydroelectric power station] and moved downstream. This accident has put millions in a state of tension. By Monday morning, it had still not been completely eliminated. The discharge of untreated wastes still continues in smaller quantities.

Bacteria 'Worse Than AIDS' Closes Subway

*LD2808201590 Moscow Television Service in Russian
1430 GMT 28 Aug 90*

[From the "Vremya" newscast]

[Text] At the beginning of this year, the Chkalov station, and then the Selmash station [shown on video as Tash-selmash - Tashkent Agriculture station] on the second line of the Tashkent subway were urgently closed down. Today, these expensive underground installations are completely sealed. Well, what happened in our subway? Our correspondent Mukhtar Ganiyev reports. [begin recording]

Correspondent: Complaints from the workers of the Chkalov station of headaches and poisoning were the

first symptoms of the extraordinary event. Then the same thing began to happen to passengers. The station was closed. A commission was formed and scientists were invited. There are many industrial enterprises alongside the station. They began to seek the cause of the misfortune in their effluents. Scientists worked for a year and by that time the signs of misfortune appeared at the Selmash station, too, unpleasant gas, poisoning, and it was closed, too.

N.N. Stepanichenko, chemist: The more acceptable, the more widely acknowledged version now is that an extensive biological reactor is at work in the tunnel space of the subway stations.

Correspondent: It is a unique and very serious case. The concrete installation was, as it were, a barrier on the ancient migratory path of the microorganisms, and nobody knows what harm the biological reactor in the seething bowels of the earth may yet arouse. One thing is clear. They have already begun to wreck the concrete of the underground and to poison the human organism. According to the analysis of epidemiologists and microbiologists from Kiev, there are molds [grib] among the bacteria which are very dangerous for human life.

Professor N.A. Dekhan-Khodzhaeva: Thirty-two patients from the Chkalov metro station have been examined. Various species [vid] of mold have been isolated from the sputum of 14 of them, while a new species of mold—(?pitilomatis variote)—has been isolated in the blood of four of them. This mold is very aggressive, and attacks not only all internal organs but also all blood cells. By its nature, it is even worse than AIDS.

Correspondent: Train drivers are ill and the expensive stations are closed. But nobody knows what shock that biological reactor may yet give rise to at the stations of the Tashkent subway. Nature does not forgive us our mistakes. [video shows the subway stations closed, a tunnel being demolished, street scenes, and interviews with scientists. [end recording]

Uranium Wastes Said Contaminating Kirovograd

LD1809220590 Moscow Television Service in Russian
2025 GMT 18 Sep 90

[From the "Television News Service" program]

[Summary] Unguarded wastes from the proximity of the uranium mines are getting onto the roads on the outskirts of Kirovograd. The gravel-like waste is being asphalted over, but the people are literally being bathed in radiation. Of checks made in 200 places, the background radiation in twelve was more than 100 micro-roentgens, five times higher than the permissible amount, and in Aleksandriyskiy Lane it was as much as four hundred times higher. [Video shows people walking around on radioactive gravel and Geiger counters showing high readings]

Ust-Kamenogorsk Beryllium Pollution Reported

PM1809100990 Moscow IZVESTIYA in Russian
16 Sep 90 Morning Edition p 1

[Report by own correspondent V. Mirolevich and IZVESTIYA report on USSR Ministry of the Nuclear Power Industry Statement under general heading: "Accident in Ust-Kamenogorsk: Culprits Conceal Documents"]

[Text] By the evening of 14 September the ecological group of the city emergency commission had made public the official figures for the contamination of Ust-Kamenogorsk after the accident at the beryllium plant.

In the city center, where the IZVESTIYA correspondents' center is located, the maximum permissible concentration of beryllium in the atmosphere was 60 times in excess of the norm [as published]. A similar concentration has been recorded on the city outskirts in the textile workers' residential microrayon. The scale of the city's contamination on the day of the accident was great. Analyses of the air taken yesterday still show traces of contamination in some places but as a whole the situation seems to be returning to normal. Soil tests have shown that the maximum permissible norm has been substantially exceeded in only one rayon.

Doctors have reported that about 200 adults and 73 children have been examined and no beryllium has been found in people. No one has signs of acute poisoning. The laboratories' round the clock work has been organized and the plant's medical and sanitation sector will take people on nonworking days. The favorable results of the first studies are not making the doctors complacent: Even a single contact with beryllium can take several weeks or up to 10 years and more to show up in a person.

Against the background of the officially proven fact of the city's contamination, the conduct of the "authors" of the tragedy—the workers at the Ulba metallurgical plant—is beyond common sense. The city services are mobilizing all equipment for the round the clock washing of the city—the culprits have not made their own vehicles available. A sitting of the emergency commission today revealed that the plant has in fact not begun work to eliminate the results of the accident. Ya. Gonenko, acting chief engineer at the Ulba metallurgical plant, has stated that the elimination plan will only be ready by Monday. In this emergency situation the plant project workers and workers of other services at the enterprise, who could have speeded up the isolation of the center of pollution open to all the winds, have, it turns out, been released on "legitimate" leave. Yet on Sunday meteorologists are already predicting a change in the weather and a strong wind. That means that the city's secondary contamination is probable. It is essential to close the damaged establishments immediately. The commission has obliged the plant to do so by the morning of 16 September.

As before nothing is known of the true causes of the accident or the quantity of substances cast into the atmosphere. The plant's security service has confiscated the necessary documents and is concealing them from the commission members. Yet these figures contain the answer to the key question which will help the ecologists and doctors establish the full picture of the contamination. [Mirolevich report ends]

On the evening of 14 September the USSR Ministry of the Nuclear Power Industry passed on to us an official report from the departmental commission for the investigation of the accident. Essentially these are the first conclusions since 12 September when a hydrogen explosion occurred at 1020 hours local time in one of the blocks of the "Ulba Metallurgical Plant" association's beryllium plant.

According to the report, the blast wave destroyed the internal partitions, glass windowpanes, and in part the walls. The ventilation was put out of operation. Four shop workers received minor injuries, they were given assistance, and are now being treated as outpatients. One worker was hospitalized.

Together with the products of combustion, beryllium aerosols in the ventilation system were expelled into the atmosphere. On 12 September from 1100 hours to 1300 hours the content of beryllium in the air was two to 10 times the maximum permissible concentration in the region of the accident in the production area. By 1520 hours the sanitary situation in the area had normalized. The beryllium content was 0.08 to 0.7 of the maximum permissible concentration.

On 12 September from 1100 to 1300 hours according to the results of analyses the beryllium aerosol content in various rayons of the city fluctuated from 0.9 to 60 times the maximum permissible concentration. On 13 and 14 September no excess of permissible levels of air pollution was recorded in the city.

The investigation of the causes of the accident is continuing.

Beryllium Plant to Close

*PM2209132990 Moscow IZVESTIYA in Russian
20 Sep 90 Morning Edition p 2*

[Report by Valeriy Mirolevich: "Closing Beryllium Production"]

[Text] Ust-Kamenogorsk—That is the decision taken by the East Kazakhstan Oblast soviet presidium.

The first data have come in from the samples taken from people who had complaints after the accident at the Ulba metallurgical plant. By the morning of 19 September an increased beryllium content had been discovered in 32 people. Of these six were children.

Constant medical monitoring of the participants in the elimination of the accident and the workers at nearby enterprises is being conducted.

The problem of cleaning the city remains acute. There is a shortage of hosing and cleansing machinery—there is no help from outside. The emergency commission's appeal to those responsible for the accident requesting that they demand additional technical facilities from the Ministry of the Nuclear Power Industry has given rise to an unexpected and I would say astounding reaction: "But what have we got to do with it. Even before the accident the city had to be cleaned—it's no use resolving common problems at our expense..." I shall not name the leader who wrote this statement, merely out of consideration for his personal safety.

The city has emerged from panic-stricken shock—never before have people put questions of personal safety so sharply and categorically. Strike committees have been organized at many enterprises and a city-wide meeting has been scheduled. An extraordinary session of the city soviet of people's deputies is being convened. Of course, it is not only a case of the Ministry of the Nuclear Power Industry establishment but also of other polluters. Ust-Kamenogorsk is one of a few cities in the Union where everything is so pervaded by the waste from enterprises of nonferrous metallurgy and the nuclear power industry that even the leaves which have fallen from the trees do not rot.

The oblast soviet of people's deputies, after a thorough discussion of the situation, has adopted a resolution on closing the beryllium production facility at the "Ulba Metallurgical Plant" association and the "Keramika" plant (it is also inside the city limits). The Ministry of the Nuclear Power Industry has been asked to elaborate measures to convert the production facilities. By this same resolution East Kazakhstan Oblast has been declared an ecological disaster zone.

Russian Parliament Sets Up Chernobyl Committee

*LD1909162290 Moscow TASS in English 1513 GMT
19 Sep 90*

[By TASS correspondents Lev Aksenov, Yuriy Kozmin, and Pavel Ostrov]

[Text] The Russian parliament decided to set up a republican state committee under the government of the Russian Federation to combat the aftermaths of the Chernobyl disaster. It will be based not in Moscow, but in Bryansk, central Russia, a region most affected by the explosion.

Although more than four years have elapsed since the tragic events in Chernobyl, their consequences are still present. As noted in the report by Fyodor Gaporyan, chairman of the sub-committee for radiation security of the parliamentary Committee on Ecology and Rational Use of Natural Resources, more than one billion roubles

have already been spent to deactivate contaminated territories in Russia. But careful radiation checks have still to be carried out in many districts of the Russian Federation. "Particularly dangerous," he stressed, "is the fact that many children are sick in those areas and that agricultural foodstuffs, grown on contaminated soil, are being shipped to other regions of Russia".

Gasparyan believes that the programme to liquidate the Chernobyl consequences should call to answer the officials that did not take necessary measures.

In addition to the bill to set up the new committee, the Russian parliament adopted a decision "On the state programme to eliminate the consequences of the Chernobyl catastrophe in the territory of the Russian Federation for 1990-1995". The document says that "a very tense socio-political situation has arisen in contaminated areas due to slow measures and a part of the population's mistrust of local and central authorities due to this".

The Supreme Soviet authorised the Russian Procurator's Office to consider the question of calling to answer officials guilty of concealing data on the radioactive contamination of territories caused by the accident at the Chernobyl atomic power plant.

Lax Veterinarians Blamed for Anthrax Outbreak

PM2908121590 Moscow IZVESTIYA in Russian
29 Aug 90 Morning Edition p 2

[Correspondent Aleksandr Ryabushkin report under the rubric "Direct Link": "Anthrax Outbreak"]

[Text] Frunze—In Kirghizia's Panfilovskiy Rayon 11 people have contracted anthrax.

"A resident of the village of Erkin-Say had murrain in his livestock," B. Moiseyev, republic deputy minister of health, said. "Some of the meat was sold to neighbors, and the rest went to the local sausage shop. Those who fell ill were mainly people who dressed the animals. The diagnosis: external-type anthrax, which we are treating. The seat of infection could be an old cattle burial site, but it has not yet been found. All measures have been taken to localize the outbreak of this disease, and, in particular, the sausage shop has been destroyed."

For the umpteenth time it is necessary to speak about "specialists of the veterinary service." Their irresponsible attitude to their official duties and the at times formal issuing of certificates do not, unfortunately, give the population a guarantee that such an outbreak will not recur.

CANADA

Alzheimer's Disease Studies Cite Aluminum Link

90WE0301 Toronto THE GLOBE AND MAIL
in English 18 Jul 90 p A5

[Article by Paul Taylor, Medical Reporter]

[Text] Toronto—Researchers have uncovered further evidence linking Alzheimer's disease with aluminum.

In one study, researchers found a high concentration of Alzheimer's cases in communities of southwestern France that had elevated levels of aluminum in the drinking water.

And in another study, northern Ontario mine workers who were exposed to aluminum powder between 1944 and 1979 appeared to have impaired cognitive, or mental, functions.

Both studies were presented yesterday at the Second International Conference on Alzheimer's Disease, in Toronto, where about 650 scientists have gathered from around the world to exchange ideas about the latest neurological disorder.

"The persistence of a relationship (in the number of Alzheimer cases) lead us to think that high aluminum concentrations in drinking water is a risk factor for Alzheimer's disease," the researchers from Bordeaux, France, stated in their scientific paper.

In the past, other researchers have suggested aluminum might play a role in the disease, but the aluminum industry has denied such a link.

And it is unlikely that the aluminum debate will be put to rest with the latest research presented in Toronto because Alzheimer's remains a mysterious disease.

Striking an estimated 300,000 Canadians, Alzheimer's disease is an irreversible illness that causes people to become increasingly forgetful, confused and unable to function on their own.

Scientists are not sure what causes the illness, although it is clearly tied to aging. An estimated 10 percent of those over 65 suffer from the debilitating condition and 25 percent of those over 85 are afflicted.

Some medical researchers suspect the disease runs in families, or that environmental factors such as aluminum increase the risks of coming down with the disease.

At present, there is not even a surefire diagnostic test for Alzheimer's disease—except after a person dies. Only by examining the brain tissue of the patient can it be determined whether a person really had the illness, and not some other form of dementia.

The brain of an Alzheimer's patient contains an excessive amount of a protein that forms into a mass of tangled, twisted filaments.

Scientists, however, reported yesterday that they hope to develop a much simpler test that would use the spinal fluid to detect evidence of the disease. If studies prove successful, the new test should be available within five years.

Study To Examine Link Between EMF, Childhood Leukemia

90WE0302 Toronto THE GLOBE AND MAIL
in English 18 Jul 90 p A10

[Article by Michelle Lalonde]

[Excerpt] Hundreds of children across Canada will participate in an experiment for the next five years designed to resolve the question of a link between exposure to electromagnetic fields and childhood leukemia.

Should the results indicate a hazard, they may come too late for several groups who have been fighting long, lonely battles to keep high-voltage power lines away from homes and schools in their communities.

Utility companies are quick to explain that electromagnetic fields are present everywhere and that many household appliances, including electric clocks and television sets, create EMFs.

The fields are strongest close to the source and fall off quickly a short distance away. Electrical fields are usually blocked by buildings and vegetation, but magnetic fields pass undetected through objects and bodies. Previous studies have suggested it is the magnetic fields that may be linked to cancer.

Utility companies also note that they are spending millions of dollars on research into the health effects of EMFs, even though they do not believe any real hazard exists.

An \$800,000 Canadian study—financed by Health and Welfare Canada, the Canadian Electrical Association and the Electric Power Research Institute—is scheduled to get under way this fall.

It will involve about 800 children from Vancouver, Victoria, Edmonton, Calgary, Saskatchewan, Regina, Winnipeg, and Montreal and is to be co-ordinated by Richard Gallagher of the British Columbia Cancer Agency. (A similar study is to be conducted in Ontario under the direction of Tony Miller at the University of Toronto.)

Half the group in the study will be children recently diagnosed with childhood leukemia.

The children will wear dosimeters—device that measure the strength of electromagnetic fields—for 48 hours as they go about their normal activities. Each dosimeter is

about the size of a cigaret package and can be strapped to the chest or back under clothing of older children; smaller children will carry the devices in teddy-bear knapsacks.

The dosimeters take readings of EMF exposure once every minute. At the end of the 48-hour period the information will be collected. Researchers can then compare the strength of the electromagnetic fields to which the children with leukemia were exposed to find whether they had more exposure than the healthy children.

Since childhood leukemia is relatively rare—a child under 14 has a four-in-10,000 chance of contracting the disease—researchers predict it will take about four years to find 400 newly diagnosed cases. The children must be recently diagnosed, so that they are being monitored in the environment in which they developed the leukemia.

Dr Gallagher said his study, unlike others, will not rely on the memories of parents to provide information about the potential carcinogens to which their children have been exposed.

"In previous studies, we have not had this kind of dosimeter so we could not get a profile of the actual exposure to electromagnetic fields," he said.

The devices will help to determine not only whether there is a link between cancer and EMFs but, if so, whether the problem is caused by very high momentary exposure or an average daily dosage, and whether the hazard lies in the electrical or the magnetic fields, he said.

Dr Gallagher said the study will not seek out children living close to power lines, but rather will try to discover whether those who contracted leukemia had been living in an environment with higher EMFs than those who did not.

"By and large, the dosage of EMFs you get in daily life from power lines is less than what appliances, household wiring or electric motors give you," he said. "Unless you are living right under a power line, you don't get much exposure from them." [passage omitted]

Tuberculosis Incidence Rises in Ottawa-Carleton

90WE0303 Ottawa THE OTTAWA CITIZEN
in English 18 Jul 90 p B1

[Article by Shelley Page]

[Excerpts] After years of steady decline, the number of tuberculosis cases in Ottawa-Carleton jumped last year to the highest level since 1971.

The 54 cases were more than double the 24 cases in 1988, said Dr Ian Gemmill, associate medical officer of health.

And health officials are worried Canada is on the heels of an American trend, where tuberculosis is re-emerging as a public health concern.

"There is potential for growth in our country as well," Gemmill said Tuesday. "We have to be vigilant in the medical community."

In the United States, health officials blame the rise on the increase in AIDS, homelessness and drug and alcohol use.

Here, where AIDS and poverty are less prevalent, Gemmill pointed to an increasing number of immigrants and refugees from countries where tuberculosis rates are high. Some new cases were reported in people who have AIDS.

People coming to Canada from other countries are tested for tuberculosis, Gemmill said. However, the disease has a long incubation period and sometimes doesn't develop until after the newcomers arrive.

He said people with AIDS may develop tuberculosis because of their weakened immune systems. Others may get both AIDS and tuberculosis because they are intravenous drug users. [passage omitted]

"We are somewhat concerned that HIV (the AIDS virus) could spread further into a population where tuberculosis is prevalent," Gemmill said. "That's when the match might hit the fuse."

Gemmill said the 54 cases last year may be an aberration. If the number of cases stays high this year and next, that will be a better indicator of the course this disease is taking, he said.

A federal health official said there has been no national increase in tuberculosis.

Dr Ed Ellis, a communicable disease specialist, said the number of tuberculosis cases "decreased almost 50 percent" between 1977 and 1988. He said there are no statistics yet for last year, when Ottawa-Carleton recorded an increase.

There were 1,947 tuberculosis cases reported in Canada in 1988. [passage omitted]

Lyme Disease Suspected in 12 Cases in Manitoba

90WE0320 Ottawa THE OTTAWA CITIZEN
in English 30 Jul 90 p A4

[Text] Winnipeg—Medical authorities say Lyme disease is probably being transmitted in Manitoba.

At least 12 people in Manitoba have symptoms of the disease and they could only have contracted it here, says Dr Margaret Fast, the province's director of communicable disease control.

"If those people in fact have Lyme disease then a logical assumption is the disease is here," Fast said.

Federal officials will publish data later this summer that support the theory that the disease is being transmitted in the province, said Dr Laila Sekla of the provincial government's Cadham Laboratory.

Last year, provincial officials would not admit the presence of the disease in Manitoba, even though handful of residents had tested positive.

The disease, named after the town of Old Lyme, Conn., is carried by certain types of ticks and transferred to humans or animals.

Symptoms include a ring-shaped rash that expands from the bite and, in some cases, arthritis, abnormal heart rhythms and nerve damage.

Deformities Found in Bass in Ontario River

90WE0321 Ottawa THE OTTAWA CITIZEN
in English 25 Jul 90 p C3

[Article by Ina Swedler]

[Text] The Ontario Ministry of the Environment is examining several dozen smallmouth bass with "unusual deformities" found in the Mississippi River near Carleton Place.

Bruce Ward, conservation officer with the Ministry of Natural Resources in Carleton Place, said the fish were found over the past 3 weeks when the ministry did some shoreline work around nearby Appleton.

He said about 60 percent of the smallmouth bass had "physical abnormalities, including several wavy lumps under their pectoral fins. That suggests there is a solid and structural abnormality under the skin."

Andre Vaillancourt, fish contamination monitor with the ministry, said the fish will be analysed for mercury, heavy metals and PCBs and then examined by a pathologist. However, he said, "we aren't really concerned with those conventional contaminants," and suspected the problem could be more serious.

Ward said "it seems to be downstream from Carleton Place, so that area may be the source." Deformed fish have been reported from Appleton to Almonte.

He said the deformities could be caused by a number of things including pollution in the river, eating habits of the bass or genetics. He said it's unlikely it is a parasite.

So far only the bass have been spotted with deformities. There are other healthy fish including northern pike in the river.

Ward said the fish examinations followed several sewage spills from the out-dated sewage treatment plant in Carleton Place.

The Environment Ministry-owned plant has come under heavy criticism lately as one of the province's worst polluters.

More than 1 million litres of raw sewage has poured into the river so far this year after heavy rainfalls and power outages. Local health authorities were forced to close area beaches and warned residents not to drink the water.

Ward said people should "exercise discretion" in what fish they eat. He recommended the deformed fish not be consumed, especially by children and pregnant women.

New Plant Disease Flame Chlorosis Spreading Across Manitoba

90WE0304 Ottawa THE OTTAWA CITIZEN
in English 18 Jul 90 p D16

[Text] Winnipeg—Flame chlorosis, a new plant disease found only in Manitoba and for which there is no known cure, is spreading like wildfire across the province.

"It's a new disease—new in the sense that it has never been reported anywhere else in the world," said Steve Haber, the Agriculture Canada researcher who gave the disease its name. "It appears to be new on the face of the Earth."

To date, the disease has attacked cereal crops like wheat and barley, but especially barley. It costs farmers in yield losses because it kills plants before they reach the heading stage.

Chlorosis is the loss of green pigment that produces yellow streaks that make the thin leaves look like flames. Hence the name, flame chlorosis.

In just five years, the disease has become common in barley fields in southwestern Manitoba. Owen Beaver, provincial agronomist in Brandon, said recently. It has since been detected in several other areas, including the Red River Valley, Interlake and eastern Manitoba.

"The disease has spread over a wide area but for the most part at low levels," he said. "At this point, we don't know if it will get to a serious level. It's such a new thing and no one has much information."

Researchers say a farmer's only recourse if he discovers flame chlorosis is to switch to another crop.

It may take five years for the disease to leave.

DENMARK

Aujeszky's Swine Disease Heavy Cost to Farmers

90WE0311A Copenhagen BERLINGSKE TIDENDE
in Danish 3 Aug 90 p II 7

[Article by Henrik Tuchsén: "Feared Swine Disease Has Cost Half a Billion Kroner"]

[Text] A swine disease has cost Danish producers of swine half a billion kroner in less than 10 years. Nevertheless, people do not want to vaccinate their animals. Veterinarians are tidying up now after a year has passed.

The feared swine disease—Aujeszky's disease—has cost the Danish producers of swine more than half a billion crowns since 1981 because herds of swine have been wiped out. Nevertheless, vaccinating the animals cannot be profitable, the Danish Slaughterhouses state.

The outbreak of the disease in 1990 has cost about 80,000,000 kroner, and 95,000 swine have had to die prematurely, so the work of tidying up after the disease began on 2 August 1990 at Sydfyn. Approximately 25 veterinarians will do "screening"—that is, perform blood tests—on about 40,000 swine at 800 different farms for a bit less than two months.

"Every time there has been an outbreak we have to go out after a couple of months and check as to whether there are any disease carriers that have hidden away," says Veterinarian Bent Kirkegaard, of Danish Slaughterhouses.

Practically speaking, it is the local, practising veterinarians who must go out into the stalls. One of them is Martin Nielsen, of the clinic in Ringe.

Heat Causes Distress

"There are some 25 of us veterinarians who have to go out to 800 herds in the next seven or eight weeks.

"All sows and boars, and five percent of the slaughter hogs are to be tested. In my opinion, that will be about 40,000 swine," Martin Nielsen says.

All herds within a range of 10 kilometers from locations where outbreaks took place will be subjected to testing.

Martin Nielsen says that they will begin at a steady rate of speed on the smaller herds in the middle of the current heat wave. The fact is that swine cannot perspire, and therefore it is not good for their hearts to be subjected to too much handling in the heat.

"And it also is rather hot for the veterinarians to be jumping around too much in the hot stalls," Martin Nielsen adds.

Bent Kirkegaard from the Danish Slaughterhouses stated that since 1981, when it was decided to eliminate Aujeszky's disease systematically, the disease has cost Danish swine producers more than 500 million kroner in lost production.

Tax Funds

It is the swine producers of all of Denmark who pay, through production tax funds, to compensate the affected farmers for their losses.

"But it would cost at least 40 million kroner a year to vaccinate swine in a belt across Schleswig and Funen. Furthermore, that would be harmful to our program of exports to countries outside of the EC," Bent Kirkegaard says.

He also points out that it is very hard to keep the disease down with vaccine. Denmark is one of the few countries in the EC that does not vaccinate.

Many non-EC countries do not want to receive meat from countries where there is vaccination against the disease. For example, the Japanese authorities believe that vaccination means that the disease and the danger of infection are present.

And Japan is a very important export market for the Danish slaughterhouses.

Instead, the slaughterhouses have given a million-kroner vaccination subsidy to northern Germany, whence the infection is believed to be brought to Denmark by the wind.

FRANCE

Alert for Possible Swine Fever Epidemic

90WE0317A Paris LES ECHOS in French 21 Aug 90 p 8

[Article by Stanislas du Guerny: "Brittany Under Very Close Watch"—first paragraph is LES ECHOS introduction]

[Text] Brittany, which ranks first among the French regions in the production of pigs, is waiting anxiously the results of the analyses carried out in the boar farms devastated by what is feared is swine fever.

Four hundred and thirty boars from a farm in Priziac were recently destroyed, as per a decision of the minister of agriculture, because this herd could have been suffering from a swine fever epidemic. The authorities are taking this situation very seriously. Morbihan produces close to two million pigs annually. Jean Paul Vellaud, director of the Morbihan Chamber of Agriculture, pointed out: "A swine fever epidemic has not yet been officially declared, even though analyses have been carried out in several farms. The Maison Alfort Veterinary School, which intervenes in this type of risk, will not give its verdict before Wednesday or Thursday."

Yet, without waiting for the test results, the minister of agriculture decided to proceed with the slaughtering of Nicolas Hardy's herd, the latter being the leading boar farmer of the department. Moreover, an actual sanitary cordon has been set up around the farmer's property. As a matter of fact, the contaminated boars were living in semi freedom on 50 hectares. The point is to prevent wild animals from spreading the epidemic.

6.2 Million Heads Annually

In fact, the authorities are taking drastic preventive measures in order to reassure Breton breeders. With an

annual production of 6.2 million heads generating a Fr7.5 billion revenue, Brittany is first among the French regions. The announcement of an uncontrolled swine fever epidemic could risk to weaken a sector already experiencing ups and downs and a strong Dutch competition. It is feared that the slaughter houses of the region will increase their purchases of raw material from other departments, if not from abroad. Finally, the 860,000 hogs slaughtered in Belgium over the past few months, due to a galloping epidemic, are forcing the farm organizations and the Morbihan prefecture to react rapidly.

How this contagious disease, only recently detected in Nicolas Hardy's herd, was able to flare up remains to be determined. The veterinary services are refusing to make suppositions, but the food supply of wild animals could be the source of the catastrophe.

ICELAND

Sheep Herds Threatened By Two Diseases

90WE283A Stockholm DAGENS NYHETER
in Swedish 13 Jul 90 p 13

[Article by Soren Lofvenhaft: "Iceland's Sheep Stock Hard Hit. Two Serious Diseases Ravaging The Island"]

[Text] Egilsstadir—A newborn lamb from the finest stock developed in Iceland has been granted life. It is sitting on the lap of Thorarinn Larisson, a researcher at Gunnar Gunnarssons farm in Fljotsdalur on the east side.

Thousands of doomed sheep are grazing in the exquisitely beautiful valley where the farm is situated. The sheep barns must be burned or sanitized repeatedly.

All sheep farming is going to cease for three years within this and many other areas of Iceland. It is a tragedy for many farmers who earn their living from sheep. Now they are not even allowed to sell their hay.

"We have been allowed to exempt 50 sheep of this white breed and to isolate them. We hope thereby that this special breed of sheep will be saved for the future," says Larisson and strokes the back of the lamb.

Two mysterious and irreversible diseases—scrapie and visna—are the reason for the slaughter of 6,000 sheep in an area north of Egilsstadir and of about 100,000 sheep in all of Iceland.

White Quality Wool

After many years of research, Thorarinn Larisson produced a white sheep with a wool of superior quality which attracted the attention of the world. It is sheep from this stock that are considered to have escaped the infection and that have been exempt from the general order decreeing a rapid liquidation of sheep breeding in the area.

Part of the research has been conducted at the Gunnarsson farm. It is situated in a remote area of Iceland where there are few tourists but where the nature is unique and the climate the most pleasant on all of this island.

Homesick

There is a bust of the man who built the farm, Gunnar Gunnarsson, outside the entrance to the magnificent stone building. He is one of Iceland's most well-known authors who died in 1975, and who was of interest in Sweden last spring when his novel "Vikivaki" was televised as an opera.

Gunnar Gunnarsson was born and raised in this valley. As an author he was most active in Denmark, where he arrived in 1907. He wrote novels and dramas with Icelandic motifs and was quite successful, especially in Germany.

Gunnar Gunnarsson became quite wealthy before the war, when he lived in Copenhagen. In 1939 he moved back to Iceland, driven by a strong feeling of homesickness and a desire to realize a dream.

Frozen Fortune

Back in Iceland, he built the very expensive farm in Fljotsdalur, two stories with 30 rooms and a roof covered with sod. Nothing like it had ever been seen in all of Iceland.

However, after ten years and a World War which froze Gunnar Gunnarsson's assets abroad, he was forced to leave his chateau and move to a small house in Reykjavik, a matter that he accomplished by selling parts of his book collection.

"Gunnar was too proud to sell his big house. He donated it to the state and wanted it to be used for agricultural research and cultural activities. And that is what has happened," says a relative, Sigurdur Blondal.

Research into the diseases of the sheep is now continuing at the Gunnarsson farm, it is of great importance for ending the slaughter.

Three Years' Wait

The Icelandic sheep farmers will be allowed to start over with new stock in three years. The older farmers, however, know already that they do not have the strength to start over. They do not want to talk about the disease that is ravaging the sheep.

They are taking one day at a time and their future is uncertain. The state guarantees their support during the three years that sheep farming is interrupted.

Overproduction led to a decrease in the price of mutton. Ten years ago there were 900,000 sheep in Iceland. The number today is 600,000 and it is estimated that it will have to be reduced to 400,000. This is one of the reasons

for the strict measures that are now being introduced for getting rid of the severe sheep diseases.

Scrapie, which has occurred on Iceland before, is caused by an unknown infectious agent which is neither a virus nor a bacterium. The brain is affected, leading to behavior changes and paralysis among the animals.

There is one known case of scrapie among sheep in Sweden. One sick animal in Sormland led to the destruction of an entire large flock.

Common to these sheep diseases is the incubation period which is very long.

The disease, visna, is considered to be related to HIV. The Icelandic physician, Bjorn Sigurdsson, was close to finding a solution to the mystery of the disease when he died of cancer and did not have time to finish his research.

PORTUGAL

Brucellosis Cases High in May

90WE0291A Lisbon DIARIO DE NOTICIAS
in Portuguese 24 Jul 90 p 14

[Text] Reportable diseases in May were up about 30 percent over the month before, according to what the LUSA Agency has been told by a source at the General Directorate of Primary Health Care (DGCSP).

Reported cases of what are known as reportable transmissible diseases, 44 of which are recognized by WHO, affected 739 individuals in the national territory excluding the Azores, as compared to 570 the month before.

According to data from the DGCSP, 413 of the affected individuals were men and 326 women. The disease affecting the greatest number of people—172 cases—was brucellosis, which is caused by ingesting fresh milk or cheese from contaminated animals.

The greatest number of cases occurred in the Guarda District (29 individuals), followed by Viseu (22), Vila Real (20), Braganca (18), and Lisbon (15).

SWEDEN

Legionnaires' Disease Traced to Hotel Water Supply

Eighteen Infected

90WE0285A Stockholm DAGENS NYHETER
in Swedish 24 Jul 90 p 6

[Article by Peter Jansson: "More May Have Been Infected—So far 18 have died of Legionnaires' Disease"—first paragraph is DAGENS NYHETER introduction].

[Excerpts] So far, 18 people are known to have come down with the dreaded Legionnaires' Disease after a visit to Vingresor's hotel Cala Bona in Majorca. But the

number of infected could be much higher because doctors can confuse the disease with ordinary pneumonia.

Half of the infected are Swedes, half Norwegians. So far, 13 of those stricken have recovered. Three Swedish and two Norwegian fatalities will be flown home on Monday from Majorca. [passage omitted]

Incubation Period

"Every year, at least a couple of people in Sweden and about 20 Swedes abroad become infected. The disease is so rare that it is easy for a physician to confuse it with ordinary pneumonia."

This is how Johan Giesecke, assistant state epidemiologist at SBL [Statens Bakteriologiska Laboratorium] explains it. Other healthy people can become sick as well, since the incubation period is a week.

"In order to cure Legionnaires' Disease, ordinary penicillin treatment is not sufficient. It demands stronger antibiotics of the broad spectrum type," he explains. [passage omitted]

Epidemic in Vasteras

The disease was discovered in 1976 and received its name at that time. War veterans belonging to the organization known as the American Legion convened at a hotel in the United States. Many of them became ill and a number of them died. The disease spread through the ventilation system.

The same thing erupted into an epidemic at a department store in Vasteras. There also, the bacterium spread by means of the ventilation system.

A number of cases of illness in Huddinge Hospital in the mid-eighties is thought to be due to bacteria which multiplied in a plastic water pipe and were afterwards transmitted through the showers.

It was determined, in the case of the Vasteras epidemic, that the bacterium came in through the ventilation system by means of ordinary tap water from Malaren.

"The bacterium can be found in ordinary tap water, but there is no cause for worry. If it were dangerous, many more would be infected," Giesecke reassured.

"Bacteria need many special conditions in order to multiply and become infectious. That is why the disease is so rare."

From Shower Pipes

90WE0285B Stockholm DAGENS NYHETER
in Swedish 26 Jul 90 p 11

[Article by Peter Jansson: "Showers Were Infection Source"—first paragraph is DAGENS NYHETER introduction]

[Text] The epidemic of Legionnaires' Disease at Vingresor's hotel Cala Bona on Mallorca was caused by bacteria

which spread by means of water droplets from the showers and the irrigation system.

This is the finding of the tests made by the National Bacteriological Laboratory [SBL].

Professor Margaretha Bottiger and Chief Microbiologist Thor Axel Stenstrom from SBL went last week down to Majorca in order to trace the source of the infection. An analysis of the tests they made indicates that the water from one of the hotel's showers contained the Legionella bacterium which causes the serious form of pneumonia known as Legionnaires' Disease.

The disease becomes infectious only through the inhaling of water droplets which contain the bacteria. Those who drink water containing the bacteria are not infected.

At the Cala Bona hotel, the infection spread through the inhaling of shower water and through the inhaling of fine water drops from the watering system for the landscaping outside the hotel.

"It is completely established that the disease was spread by bacteria from the water mains. The danger is over now because more chlorine has been put into the water and the temperature of the warm water has been raised in order to kill the bacteria. The water has also been turned off," said the chief microbiologist Thor Axel Stenstrom.

Legionnaires' Disease, in certain cases, has been spread by the moisture from ventilation systems. However, tests of the condensation from the hotel's ventilation system contained no bacteria.

So far, 18 Swedish and Norwegian tourists have been diagnosed with Legionnaires' Disease since they were infected at the hotel. One was treated in the intensive care unit and another was put in a respirator, but both have now recovered. Only five continue to be sick, but they are out of danger.

UNITED KINGDOM

Virulent Salmonella Food Poisoning Rises Over 70 Percent

90WE0305 London THE DAILY TELEGRAPH
in English 18 Jul 90 p 6

[Article by Virginia Matthews, Consumer Correspondent]

[Text] Food poisoning caused by one of the most virulent forms of salmonella has increased by more than 70 percent in the past six weeks, according to figures to be circulated to local authority health officials today. The warning comes from the Public Health Laboratory's Communicable Disease Surveillance Centre.

Its report says that salmonella enteritidis—known as phage type four, or PT4—which is usually associated

with eggs and poultry, has risen by 24 percent in the past year, reaching a total of 3,228 cases.

In the past six weeks alone, there has been a record 74 percent increase in cases of sickness caused by PT4, with more than 100 cases being recorded each week. Salmonella food poisoning in general is up by more than seven percent compared with last year's figures, reaching 7,178 cases so far this year. This time last year the number was 6,686.

Environmental health officers believe that the true salmonella food poisoning figure in Britain is at least 10 times greater than official figures suggest because so many people are reluctant to report it or because their illness is wrongly diagnosed.

Mr Allan Johnson, chairman of the food and general health committee of the Health Officers' Institute, said: "People do tend to be less cautious about food hygiene in the summer, but I can see no logical reason why this particular strain of enteritidis should have increased so dramatically in recent weeks."

Particularly severe outbreaks of PT4 food poisoning have occurred this year at factory canteens, hotels and funerals, but it is understood that there has not been a common dish on the menus.

Mystery Increase in Influenza-Type Diseases

90WE0306 London THE DAILY TELEGRAPH
in English 14 Jul 90 p 7

[Article by Peter Pallot, Health Services Staff]

[Text] The heatwave is bringing with it a virus that causes a mystery increase in influenza-type cases across the country, a leading expert in infectious diseases said yesterday. Most of the victims are children under five, but there is little risk of death.

The unseasonal threat to health was posed by para-influenza type 3, said Dr Karl Nicholson, senior lecturer in infectious diseases at Leicester University. It thrived in hot weather but was not as severe as winter flu.

About 85 percent of cases occurred among under-fives, who could develop the wheezy chest of bronchitis and feel unwell.

A GP should be consulted if a child ran a temperature or had an underlying lung or heart condition, Dr Nicholson said. Most children would throw off the infection within a week or two. "This is not an influenza virus and is not the sort of thing that should cause alarm."

The virus could affect old people but was only rarely fatal. "It surfaces every summer and is at a peak for about two months. Why it thrives in summer when other viruses are most active at other times is something we do not understand. Seasonality in viruses is difficult to explain."

Dr Nicholson's warning came as the Royal College of General Practitioners' monitoring unit in Birmingham recorded a rise in flu-like cases for the seven-day period ending last Tuesday.

The unit recorded 24.3 cases per 100,000 people, compared with 19.9 for the previous seven days and 17.3 for the seven days before that.

Cases reported to the monitoring unit by family doctors represented only a tiny fraction of the true incidence, said Dr Nicholson.

The Influenza Monitoring and Information Bureau said there was no comparison between the current outbreak and last winter's epidemic—the worst for 18 years.

The last outbreak, which was so severe that hospital wards closed through lack of nurses, caused aches and pains as well as feelings of lethargy and a temperature. Para-influenza did not cause aches and the feeling of being unwell was less intense.

Increase in Meningitis, Dangerous Form More Common
90WE0309 London THE DAILY TELEGRAPH
in English 4 Jul 90 p 4

[Text] Cases of the brain disease meningitis totalled 2,987 in 1988, 18 percent more than the previous year, according to figures from the Office of Population Censuses and Surveys yesterday.

Nearly half the notifications were for the most dangerous form, meningococcal meningitis, which has become more common since the mid-1980s.

Pesticide-Proof Virus Attacking Vegetable Crops
90WE0110 London THE DAILY TELEGRAPH
in English 30 May 90 p 6

[Article by David Brown]

[Text] A virus that attacks vegetables so fast that it beats the deadliest pesticides ranged against it is ruining crops of cucumbers and courgettes. Its hallmarks are unsightly

yellow blotches on the leaves and often misshapen vegetables with erupting wart-like lumps. Marrows, squashes and pumpkins can be infected by it.

Known as zucchini yellow mosaic virus, it was first recognised among courgettes in Italy and sighted in Britain in 1983. It is spread by greenfly and other aphids. Infected plants cannot be cured.

The disease has spread to farms and gardens throughout Hereford and Worcestershire, Bedfordshire and Kent, some of the main cucumber and courgette growing areas.

Dr Chris Wood, spokesman for the Institute of Horticultural Research, at the Wellesbourne research station near Stratford-upon-Avon, said: "This is very nasty. It can infect a plant within a minute of an aphid landing on it."

The virus acts so rapidly that unless aphids are killed in the air by pesticide sprays, plants are doomed. Once an aphid has landed, the virus it carries gets to work before pesticide can kill the aphid.

Dr Wood said: "We are working on ways of tackling this problem at Wellesbourne. The solution appears to lie in building resistance into plants rather than relying on sprays.

"This is obviously the most environmentally friendly way of going about it, but work is at an early stage. We will be looking at the genetic make-up of plants and trying to find genetic material that is resistant to this virus so that it can be used in future plant-breeding."

In the meantime there is little comfort for farmers and gardeners visited by the virus.

"Anybody who suspects that his or her crops are suffering from this virus should ask Ministry of Agriculture advisers for confirmation. Once confirmed, the only thing to do is destroy the plants," said Dr Wood.

When the virus arrived in Britain it was made a notifiable disease by the Ministry in an effort to contain it. Now it is so widespread that it is regarded as endemic in this country.

The virus is rife in the West and is regarded as one of the costliest threats to cucumbers and courgettes in America.

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